ENGLISH

SCANORA® 5.0

Installation Manual

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Copyright

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1 Introduction

1.1 General

SCANORA software (hereafter called “the software”) is a complete solution for digital image acquisition, processing, viewing and storing. The software supports SOREDEX SCANORA 3D, CRANEX D, CRANEX 3D, CRANEX Novus, DIGORA PCT, DIGORA Toto and DIGORA Optime devices, DIGORA Vidi and other intraoral cameras. Images can also be imported from other digital sources. The software stores images and patient information in a SQL database and provides tools for image archiving.

This installation manual covers the installation of the software Standard and DICOM versions. The user manual describes how to use the software. See the equipment manuals before installing or using the equipment. See the Windows manuals for further information about the Windows environment.

With the software you can perform the following operations, assuming that all the equipment is ready for use:

- Create a new patient and store patient information in a database.
- Capture and store digital X-ray images with exposure values from the device.
- Capture and store intraoral photographs.
- Export and import digital images.
- Process images to enhance their diagnostic value with dental specific tools.
- Analyse the image with application specific measurement tools.
- Build an environment with multiple workstations using a database shared over a network.
- Printing images and image information.
- Capture 3D images and launch 3rd party image analyzing and planning tools

The software allows you to import and export image files. Supported file formats are D32, JPG, JPG2000, TIF, BMP and PNG. D32 is SOREDEX’s proprietary own file format. Images can be saved in the database in PNG (16 bit) or JPG formats (12 bit).

The software can be used in a network environment. If the software is installed in several computers, the patient and image database can be shared and used from different workstations.

We recommend to read this manual before installing and using the software.

1.2 Manufacturer's liability

As a manufacturer, we can only assume liability for safe and reliable operation of this software when the PC software is installed and used according to the software installation and user manuals.

NOTE! *Safe and reliable usage of the product requires that the user has read and understood the instructions and restrictions given in the manual.*

1.3 Abbreviations

PC	Personal computer
HD	Hard disk
Hz	Hertz; cycles per second
MHz	Megahertz, millions of cycles per second
CPU	Central processing unit (computer)
RAM	Random access memory
MB	Megabytes
GB	Gigabytes
CCD	Charge-coupled device
DVD-RW	Digital Versatile Disc (re-writable)
PCI	Peripheral Component Interconnect
DAT	Digital audio tape
MOD	Magneto optical drive
USB	Universal Serial Bus
VfW	Video for Windows, a video format supported by the software Intraoral Camera interface.

WDM	Windows Driver Model, a video format supported by the software Intraoral Camera interface.
WLAN	Wireless Local Area Network

1.4 System requirements

Minimum system requirements for the software client	
Operating System (OS)	■ Windows XP Professional SP3 (32-bit) ■ Windows Vista Business/ Ultimate/Enterprise SP2 (32 or 64-bit) ■ Windows 7 Professional/ Ultimate/Enterprise SP1 (32 or 64-bit) ■ Windows Server 2008 SP2* (32-bit) ■ Windows Server 2008 SP2* (64-bit) *requires installation of Desktop Experience
Memory (RAM)	At least 1 GB (32-bit OS) or 2 GB (64-bit OS)
Processor	2 GHz Pentium 4 or better
Hard disk	8 GB free space
DVD-ROM	DVD-ROM drive for installation
Keyboard	Yes
Mouse	Yes
Network card	10/100/1000 Mb/s Ethernet
Monitor	19" or larger recommended, capable of 1280 x 1024 resolution, 24-bit color, or better
PCI slot	PCI slot for CRANEX D capture card in CRANEX D acquisition PC
USB port	USB port for DIGORA Toto

CB3D additional requirements	■ GPU graphics card supplied with CB3D device, requires one available PCI-express x16 full-length, dual-slot ■ Power supply for reconstruction GPU: - Minimum 500 watt power supply - 6-pin x 2 supplementary power connectors ■ At least 3 GB RAM ■ Intel Core 2 Quad 2.0 GHz or better ■ 1600 x 1200 monitor or better
Other software	We recommend anti-virus software be used for continuous file protection. However, the CPU must still be fast enough to run multi-tasks during image capture.
Other device	Device to support archive and backup media

Minimum system requirements for the software database and SQL Server	
Operating system (OS)	■ Windows XP Professional SP3 (32-bit) ■ Windows Vista Business/ Ultimate/Enterprise SP2 (32 or 64-bit) ■ Windows 7 Professional/ Ultimate/Enterprise SP1 (32 or 64-bit) ■ Windows Server 2003 SP2 (32-bit)* ■ Windows Server 2008 SP2 (32-bit) ■ Windows Server 2008 R2 SP1 (64-bit) ■ Windows Server 2008 SP2 (64-bit) *requires Windows Server 2003 hotfix (KB925336) before CliniView installation

Supported SQL Server versions	■ SQL Server 2005 SP2 (32-bit x86 edition) Express/Standard/ Workgroup/Enterprise ■ SQL Server 2008 with SP1* (32-bit x86 edition) Express/Standard/Workgroup ■ SQL Server 2008 R2 (32-bit x86 edition) Express/Standard/ Workgroup *requires SP1 installation after SQL Server installation
Memory (RAM)	At least 1 GB (32-bit OS) or 2 GB (64-bit OS)
Processor	2 GHz Pentium 4 or better
Monitor	VGA or higher-resolution monitor
DVD-ROM	DVD-ROM drive
Hard disk	8 GB free space
Pan / ceph images	4 GB /1000 panorama or cephalometric images
DIGORA Optime	2 GB/1000 images
DIGORA Toto	Standard resolution mode: 1.3 GB/1000 images High resolution mode: 4 GB/1000 images
SCANORA 3D, CRANEX 3D	100 GB/1000 CB3D study
Other software	We recommend anti-virus software be used for continuous file protection. However, the CPU must still be powerful enough to run multi-tasks during image capture.
Backup	Backup system and RAID 1 or RAID 5 disks highly recommended

NOTE! *If the audio card is installed, speakers are needed to hear the signal.*

NOTE! *In the case of installation being done in Windows Server 2003, it requires the Windows Server 2003 hotfix (KB925336) before installation can be done.*

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For safe and reliable system performance, you need to arrange an appropriate backup procedure; meaning that you regularly back up the system and store the labelled back up media in a safe place. The end-user is solely responsible for backing up all data.

1.5 The software specifications

APPLICATION SOFTWARE:	
PRODUCT NAME	SCANORA
Image acquisition modalities	■ SCANORA 3D ■ DIGORA Optime ■ DIGORA Toto ■ CRANEX D ■ CRANEX 3D ■ CRANEX Novus ■ DIGORA PCT ■ TWAIN-compatible scanners and digital cameras ■ Video acquisition devices VfW format ■ WDM format
Patient database	Microsoft SQL Server 2008 R2 (Express/Workgroup/ Standard/ Enterprise Edition)
Image storage	Local or network
Password security	Yes
Image appearance	Instantly on monitor
Imaging procedures (pan/ceph):	*See corresponding Device's User Manual*
Imaging procedures (intraoral):	Series Mount exposure Single exposure
Imaging procedures (pan/ceph):	See User Program Chapter in CRANEX D, CRANEX Novus and DIGORA PCT User Manual.
Imaging procedures (3D):	*See* *- SCANORA 3D User Manual* *- CRANEX 3D User Manual*

Image processing	Brightness & Contrast Zoom Move Noise Reduction Edge enhancement Embossment Invert Mirror Rotate Sharpen Unsharp mask Pseudocolor Isodensity color Optimize contrast (low, medium, high) Gamma correction adjustments Equalized histogram, logarithmic histogram, linear histogram **NOTE!** *CB3D 3D images require 3rd party viewing and/ or planning software.*
Overlay graphics	Text, Line, Free hand, Angle, Rectangle, Circle, Arrow, Region of Interest tools, Implant tools, Drag or Erase graphics, Edit graphics, Save graphics **NOTE!** *CB3D 3D images require 3rd party viewing and/ or planning software.*
Measurements	Length Calibration Angle Free Angle **NOTE!** *CB3D 3D images require 3rd party viewing and/ or planning software.*
Image Printing (2D modalities only)	MS Windows compatible printers DICOM Printers (SCANORA DICOM) Multi-image printing Free print layout design Image information printing

Image archiving	SCANORA Manager application
Image dynamics/ grayscales	12-bit/4096 (capture) 16-bit/64k (process & handling) 8-bit/256 (display)
Image storage mode	16-bit enhanced
File formats	PNG (16-bit), JPG (12-bit)
File compression	PNG (lossless), JPG (100 % - 60% quality)
Typical file size	Panoramic About 2-4 MB (PNG 16 bits) Cephalometric 3-5 MB (PNG 16 bits) Intra DIGORA Toto 3-5 MB (PNG 16 bits) CB3D- 60-350 MB Intra DIGORA Optime 0.3-2 MB (PNG 16 bits)
Import/Export file formats	BMP, D32, PNG, JPG, TIFF, DICOM, JPEG 2000, MNG

1.6 The software DICOM SOP Classes

SOP Class Name	SOP Class UID
Verification	
Verification Service Class	1.2.840.10008.1.1
DICOMDIR	
Basic Directory	1.2.840.10008.1.3.10
Storage SCU	
Digital X-ray Image Storage for Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X-ray Image Storage for Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Intra-oral X-ray Image Storage for Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-oral X-ray Image Storage for Processing	1.2.840.10008.5.1.4.1.1.1.3.1
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4
Storage Commitment SCP	
Storage Commitment Push Model	1.2.840.10008.1.20.1
Query/Retrieve SCU	
Patient Root Find	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Move	1.2.840.10008.5.1.4.1.2.1.2
Study Root Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root Move	1.2.840.10008.5.1.4.1.2.2.2
Modality worklist SCU	
Modality Worklist	1.2.840.10008.5.1.4.31
DICOM Print SCU	
Printer SOP Class	1.2.840.10008.5.1.1.16
Basic Grayscale Print Management	1.2.840.10008.5.1.1.9
Basic Film Session	1.2.840.10008.5.1.1.1
Basic Film Box	1.2.840.10008.5.1.1.2
Basic Grayscale Image Box	1.2.840.10008.5.1.1.4
Basic Color Print Management	1.2.840.10008.5.1.1.18
Basic Color Image Box	1.2.840.10008.5.1.1.4.1

1.7 The software compatibility table

The following table shows allowed the software versions for different SOREDEX imaging modalities.

x = tested combinations with Windows® XP Professional (32-bit)

y = tested with Windows® 2000, XP Professional (32-bit) and Vista Business, Vista Enterprise, Vista Ultimate (32-bit)

z = tested with Windows® XP Professional (32-bit), Vista Business SP2 (32-bit), Vista Enterprise SP2 (32-bit) and Vista Ultimate SP2 (32-bit)

b = tested with Windows® XP Professional (32-bit), Vista Business (32-bit, 64-bit), Vista Enterprise (32-bit, 64-bit) and Vista Ultimate (32-bit, 64-bit), Windows 7 Professional (32-bit, 64-bit), Windows 7 Enterprise (32-bit, 64-bit), Windows 7 Ultimate (32-bit, 64-bit)

c = tested with Windows® Vista Business (32-bit, 64-bit), Vista Enterprise (32-bit, 64-bit) and Vista Ultimate (32-bit, 64-bit), Windows 7 Professional (32-bit, 64-bit), Windows 7 Enterprise (32-bit, 64-bit), Windows 7 Ultimate (32-bit, 64-bit)

	SCANORA 3D	DIGORA Optime	CRANEX Novus	CRANEX D	CRANEX 3D	DIGORA Toto	DIGORA Vidi	DIGORA PCT
3.0	x	y						
3.1	z	z	z	z				
3.2	z	z	z	z		z	z	z
4.2	b	b	b	b		b	b	b
4.3	b	b	b	b		b	b	b
5.0	b	b	b	b	c	b	b	b

Windows® 2000, Windows® XP Professional and Windows® Vista Business, Windows® Vista Ultimate, Windows® Vista Enterprise, Windows® 7 Professional, Windows® 7 Ultimate, Windows® 7 Enterprise are registered trademarks of Microsoft Corp.

NOTE! *Refer Chapter 1.4 for details about service packs.*

2 Software installation

The software can be used as a standalone system or in a network environment. The software system components:

- Client (basic software)
  – with DICOM option
- Database

If the software is installed to a network environment of several computers, the patient and image database can be shared and used from different workstations.

2.0.1 Standalone system

In standalone system all system components are installed to the same workstation connected to the X-ray device.

2.0.2 Network environment

In network environment the software system components can be divided to several workstations.

- Modality workstation for image capturing
  – Client: Common, Image capturing
  – DICOM option

- Viewing workstation(s)
  – Client: Common
  – DICOM option
  – 3D image viewing software

- Database workstation
  – Database: Common, Database engine

  If you have existing MS SQL server,
  see chapter 5.1, Installing the software database to existing MS SQL server.

NOTE! *Installation is possible only with Administrator user rights. In case of problems, contact the system administrator.*

NOTE!
Configure network with sufficient access rights and priviledges.

NOTE! *In a case of misconfigured DNS server or absence of a local DNS server, use the IP address in the file server configuration instead of hostname in the Database computer (refer chapter 9.5). This should be done after the Database installation is completed and before the start of Client(s) installation.*

NOTE!
In case the Firewall is enabled, you may have to add new Inbound Rules or Exceptions for the following in the Database Computer:

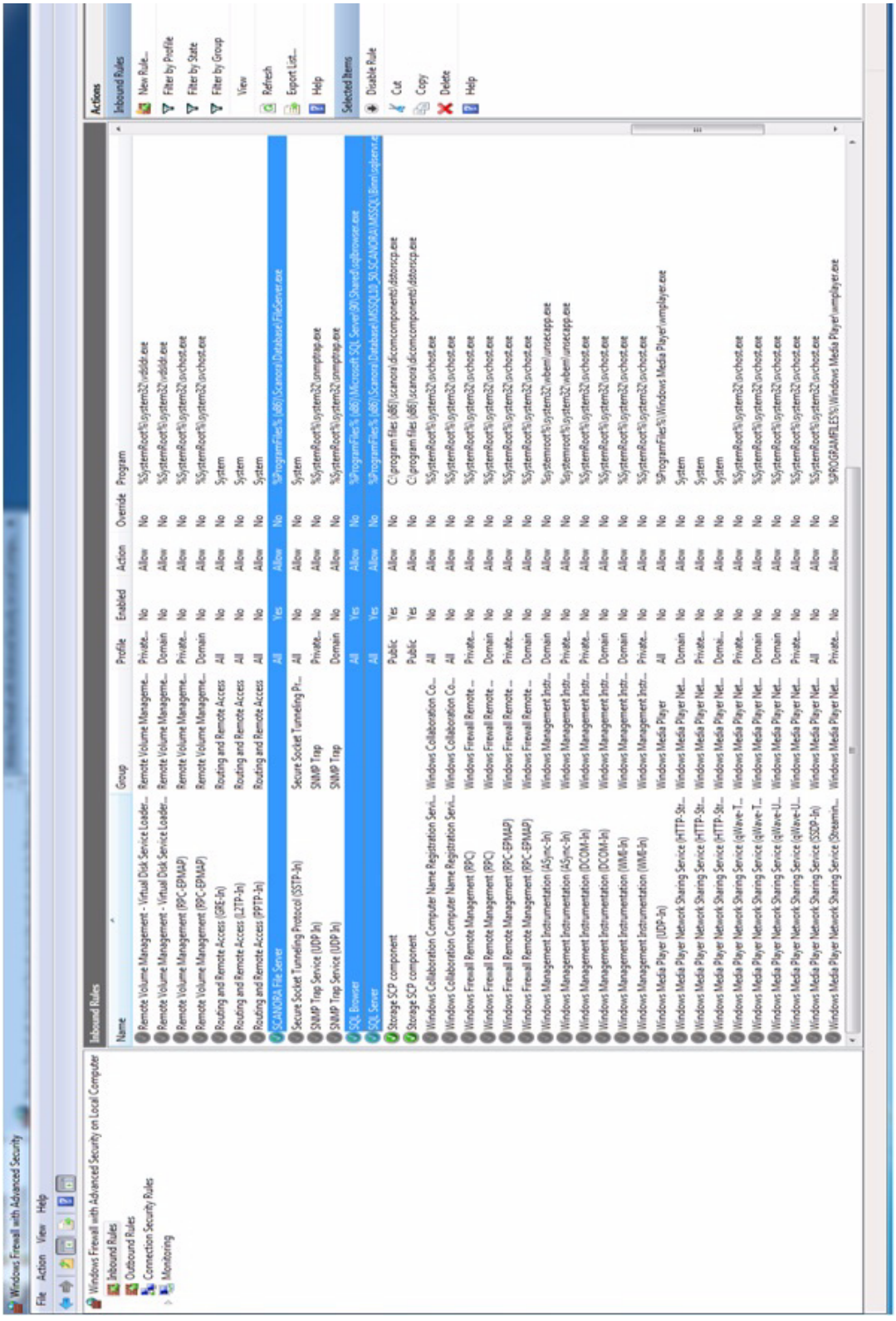
- The software file service i.e FileServer.exe
- SQL Server service i.e sqlserver.exe
- SQL Browser service i.e sqlbrowser.exe
- SQL Server port i.e port on which sqlserver.exe is listening
- SQL Browser port i.e port on which sqlbrowser.exe is listening

The default path for the executables for above services:

- File Server ⇒ C:\Program Files (x86)\Scanora\Database\FileServer.exe
- SQL Server ⇒ C:\Program Files (x86)\Scanora\Database\MSSQL10_50.SCANORA\MSSQL\Binn\sqlservr.exe
- SQL Browser ⇒ C:\Program Files (x86)\Microsoft SQL Server\90\Shared\sqlbrowser.exe

As an example In Windows 7 operating system, if the Windows Firewall is enabled, you can add the inbound rules by navigating to *Control Panel ⇒ Windows Firewall Advanced settings ⇒ Inbound Rules*.

The following shows an example of Windows Firewall inbound rules screen-shot after the above inbound rules have been added:



2.1 Software installation

NOTE! *Do not install any of the software components to external hard disks.*

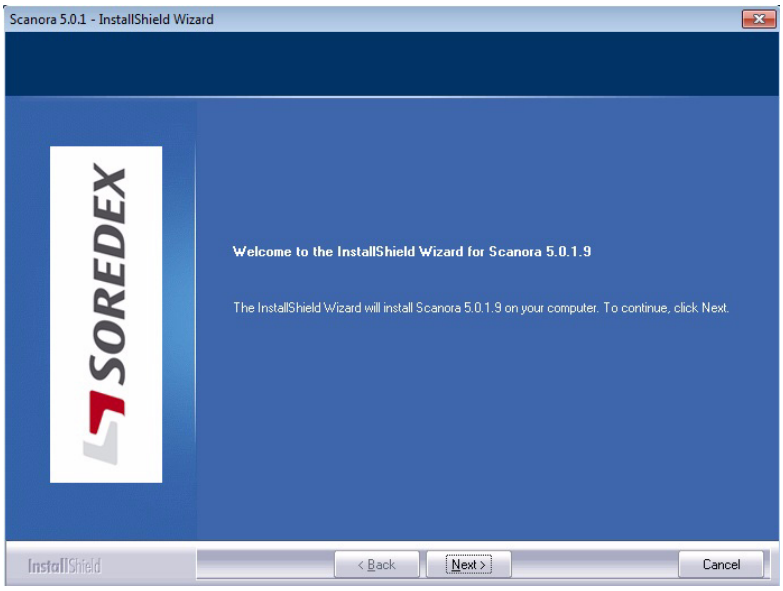
1. Insert the software DVD into the DVD-ROM.
2. The installation program starts automatically. If the installation program does not appear, double-click the SCANORASetup.exe file on the DVD to start the software installation.
3. Follow the on-screen instructions to install the software.

   NOTE! *Depending on the operating system, one or more reboots of the computer is needed and/or pompted during the installation process. Observe automatic continuation on installation after each reboot.*

4. Initialization screen "Preparing to Install...".
   Wait for the package to be extracted.

Scanora 5.0.1 - InstallShield Wizard
Preparing to Install...
Scanora 5.0.1 Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Extracting: ScanoraPackage.msi
Cancel

5. "Welcome to the InstallShield...". Click **Next**.


Scanora 5.0.1 - InstallShield Wizard
SOREDEX
Welcome to the InstallShield Wizard for Scanora 5.0.1.9
The InstallShield Wizard will install Scanora 5.0.1.9 on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

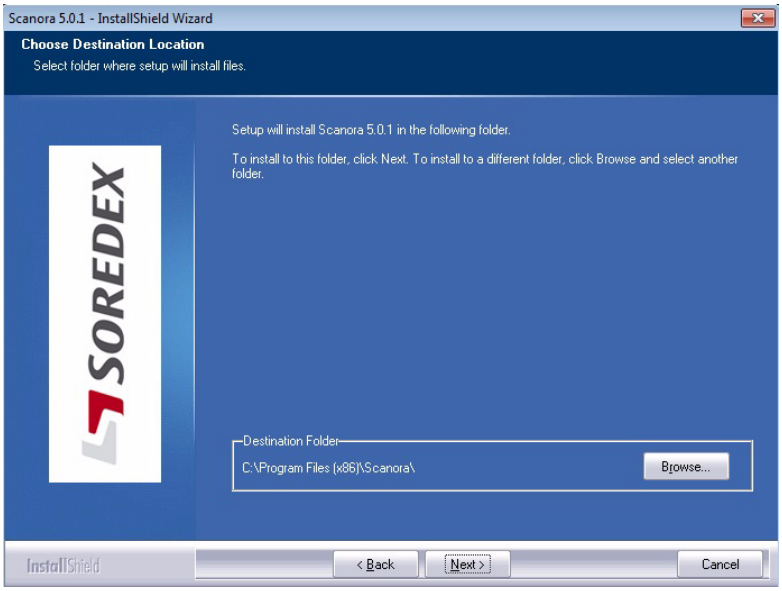
6. "License Agreement". Read the software license and click **Yes**.

Scanora 5.0.1 - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
SOREDEX
Press the PAGE DOWN key to see the rest of the agreement.
SOFTWARE LICENSE
THIS DOCUMENT IS A LEGAL AGREEMENT BETWEEN YOU, AS THE <LICENSEE>, AND PALODEX GROUP OY (THE <LICENSOR>) GOVERNING YOUR RIGHT TO USE THE SCANORA SOFTWARE (<Software>).
IF YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE SOFTWARE LICENSE AND THIS PARAGRAPH, PLEASE PRESS <I Agree> AT THE PROMPT BELOW IN WHICH CASE YOU AGREE THAT THIS AGREEMENT IS ENFORCEABLE LIKE ANY WRITTEN NEGOTIATED AGREEMENT SIGNED BY YOU. IF YOU DO NOT CONSENT TO THE SOFTWARE LICENSE AND THIS PARAGRAPH, PLEASE PRESS <Cancel> AT THE PROMPT BELOW, IN WHICH CASE THE SOFTWARE WILL NOT OPERATE AND RETURN THE SOFTWARE AND THE ACCOMPANYING ITEMS TO YOUR PLACE OF PURCHASE FOR A REFUND.
1. Subject-matter of the Software License
This Software License governs the use of the Software. Software means the software product specified above including new versions or updates of the Software made generally available
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install Scanora 5.0.1, you must accept this agreement.
Print
InstallShield
< Back
Yes
No

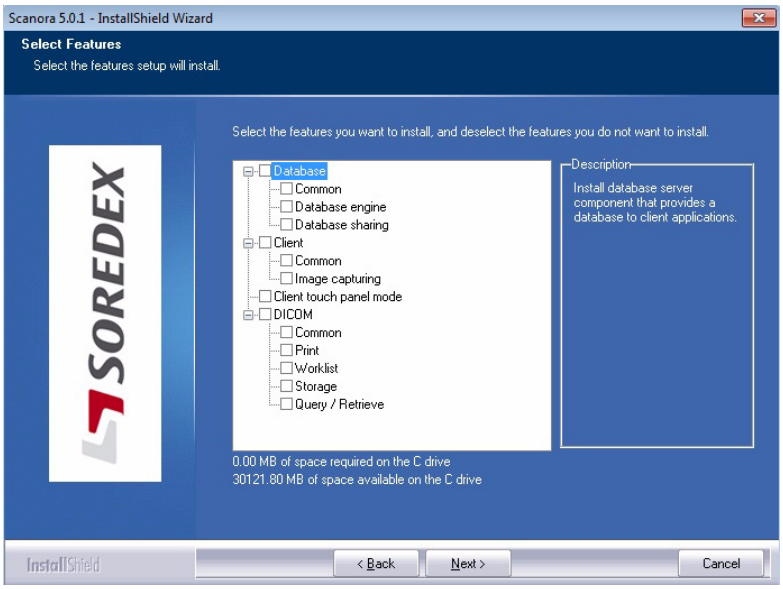
7. General location. "Choose Destination Location". Select general destination folder for the software and click **Next**.

For 32-bit platforms Default destination is "C:\Program Files\SCANORA\".

For 64-bit platforms Default destination is "C:\Program Files (x86)\SCANORA\".


Scanora 5.0.1 - InstallShield Wizard
Choose Destination Location
Select folder where setup will install files.
SOREDEX
Setup will install Scanora 5.0.1 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files (x86)\Scanora\
Browse...
InstallShield
< Back
Next >
Cancel

8. "Select Features". Select the features to be installed to this workstation. This selection should be made carefully observing the descriptions.



Standalone system:
Select all needed features, but no Database sharing.

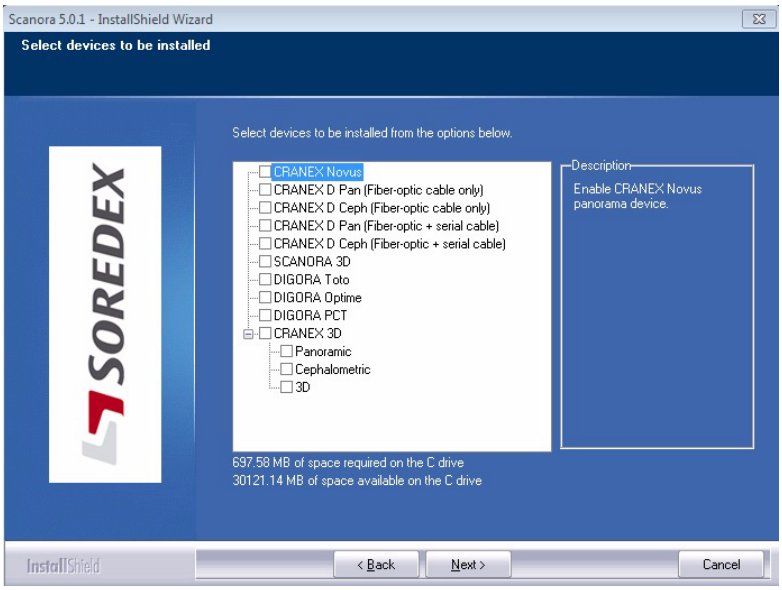
Network system:
Select database sharing at database workstation.

Modality workstation only:
Select “Image capturing.”

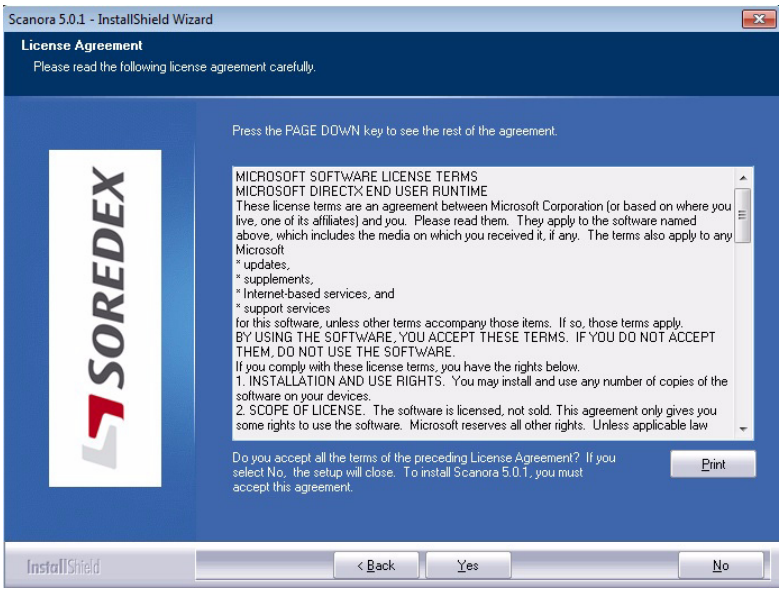
Click **Next**.

9. Select used device for enabling image capturing.

Click **Next**.



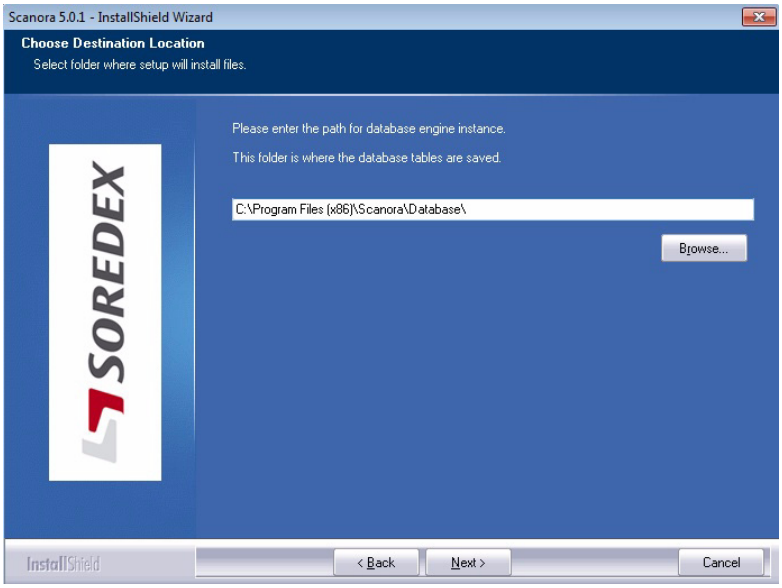
10. "License Agreement". Read the Microsoft license and click **Yes**.


Scanora 5.0.1 - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT DIRECTX END USER RUNTIME
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
* updates,
* supplements,
* Internet-based services, and
* support services
for this software, unless other terms accompany those items. If so, those terms apply.
BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT USE THE SOFTWARE.
If you comply with these license terms, you have the rights below.
1. INSTALLATION AND USE RIGHTS. You may install and use any number of copies of the software on your devices.
2. SCOPE OF LICENSE. The software is licensed, not sold. This agreement only gives you some rights to use the software. Microsoft reserves all other rights. Unless applicable law
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install Scanora 5.0.1, you must accept this agreement.
Print
InstallShield
< Back
Yes
No

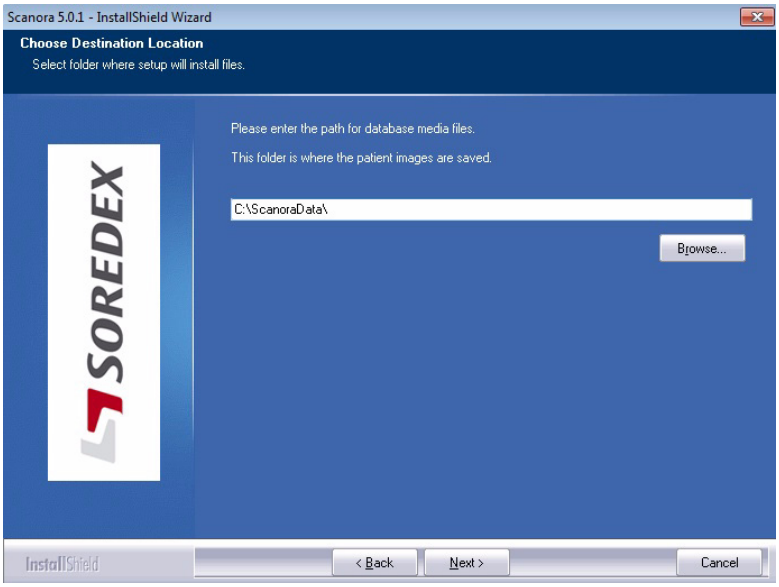
11. *Database workstation only:*

Database tables location if Database engine is selected. "Choose Destination Location". Select a destination folder for database tables and click **Next**.

For 32-bit platforms Default destination is "C:\Program Files\SCANORA\Database\".
For 64-bit platforms Default destination is "C:\Program Files (x86)\SCANORA\Database\".



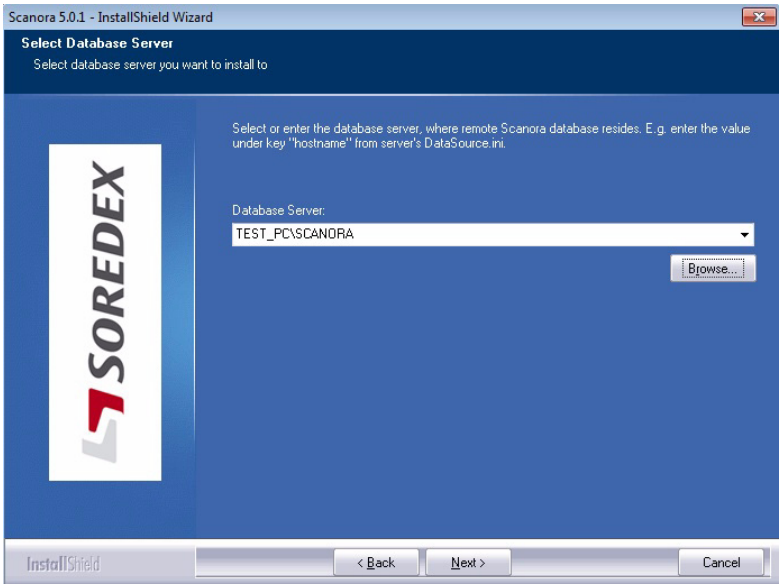
Database media files location if Database is selected. "Choose Destination Location". Select a destination folder for database images and click **Next**.
Default destination is "C:\ScanoraData\".



Note! *For the system to work correctly the Database tables and Database media files must be located in the same computer.*

Workstation not having database:

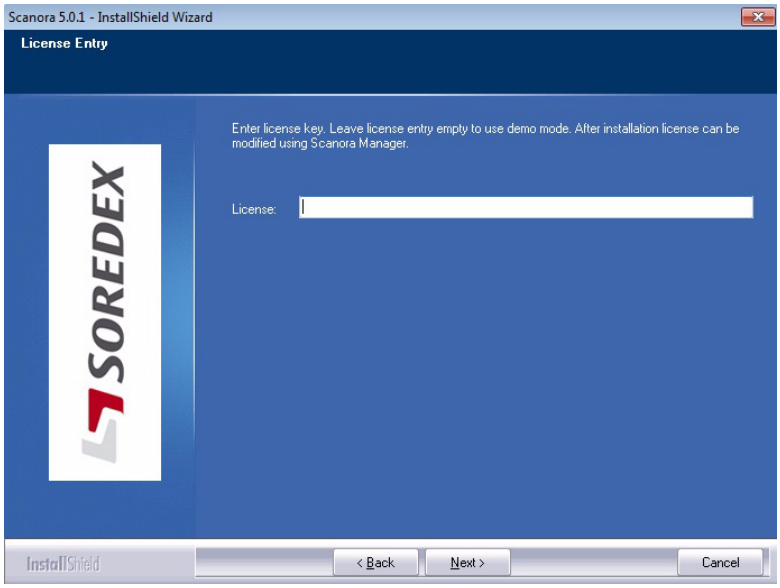
Database connection configuration in the workstation connecting to a remote database. Select or enter the database server, where remote the software database resides e.g. enter the value under key "hostname" from server's DataSource.ini (default location of DataSource.ini in the server is C:\ScanoraData\Client).


Scanora 5.0.1 - InstallShield Wizard
Select Database Server
Select database server you want to install to
Select or enter the database server, where remote Scanora database resides. E.g. enter the value under key "hostname" from server's DataSource.ini.
Database Server:
TEST_PC\SCANORA
Browse...
SOREDEX
InstallShield
< Back
Next >
Cancel

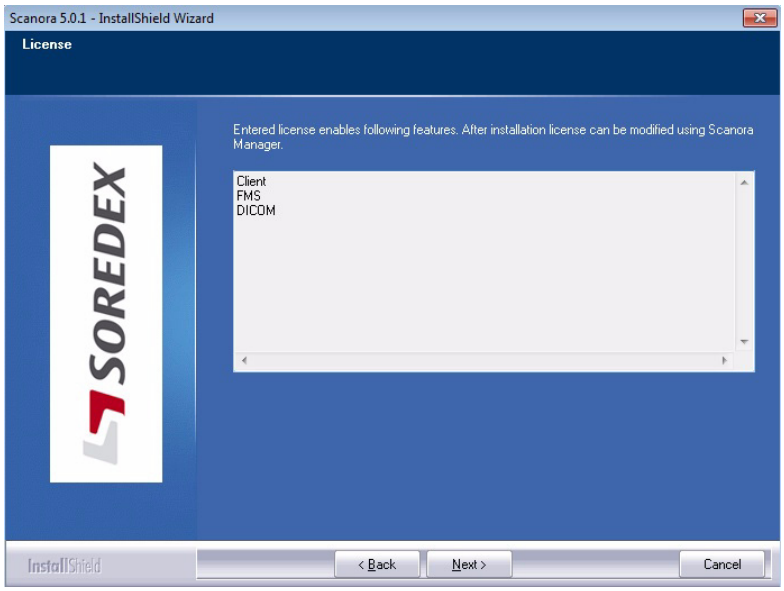
NOTE! *The Database path should be shorter than 58 characters.*

NOTE! *In case of misconfigured DNS server or absence of a local DNS server, use the IP address while entering the database server where remote the software database resides.*

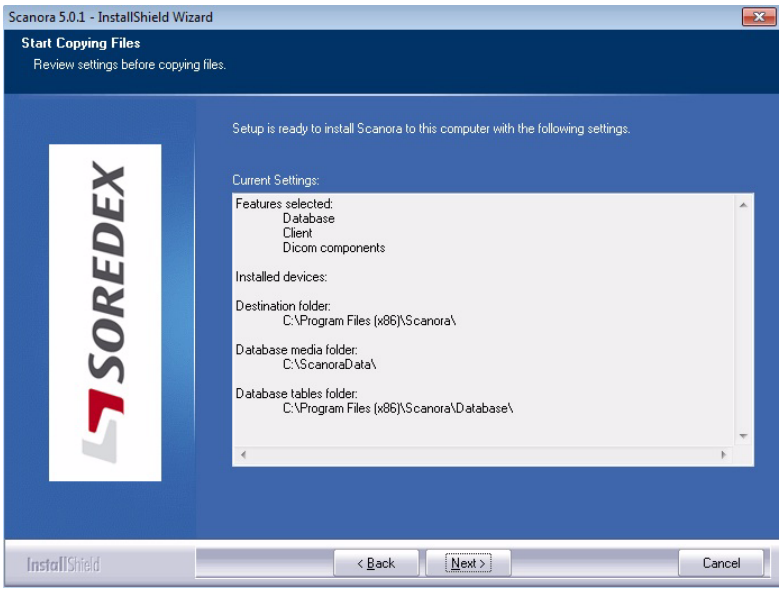
12. "License Entry". Enter the license key. Click **Next**.


Scanora 5.0.1 - InstallShield Wizard
License Entry
Enter license key. Leave license entry empty to use demo mode. After installation license can be modified using Scanora Manager.
License:
SOREDEX
InstallShield
< Back
Next >
Cancel

13. "License". User is presented with licensed features the license key grants. Click **Next**.



14. "Start copying files". Verify the selected features and folders and click **Next**.



15. If .NET 2.0 is missing. "Installing .NET 2.0".
Wait for 1-10 minutes.

16. If Database Engine was selected. "Installing database engine...". Wait for 1-15 minutes.

17. Copying files dialog. Wait for 1-5 minutes.

18. DirectX license agreement. Read the license and click **Yes**.

19. *Modality workstation only:*

Gain file installation for CRANEX D. The installation wizard asks 'Do you want to install Gain files?'
Click Yes.
GainInstaller dialog opens. Insert the Gain file media and browse the Gain file. Select all the gain files and click **Install**.

NOTE! *The DIGORA Toto gain files are installed automatically, when the DIGORA Toto image capturing is started for the first time.*

20. "InstallShield Wizard Complete". Reboot the computer if reboot is asked and click **Finish**.

NOTE! *If You get the following error message during the installation, click OK to continue installation: "The Windows Installer service cannot update the system file c:\WINDOWS\system32\msxml6r.dll because the file is protected by Windows. You may need to update your operating system for this program to work correctly.*

NOTE! *Make sure that the screensaver does not lock the computer on the CB3D image capturing workstation.*

2.2 Display settings for the software

The Windows display settings may have to be changed if the display is difficult to read after the software installation. To change display mode, select *Start* ⇒ *Settings* ⇒ *Control Panel* and double-click the display icon. Select the Settings tab to make specific changes (Windows may prompt to restart Windows for this change to take effect).

The recommended Windows display settings are:

- Desktop area at least 1024 x 768 pixels
- Color quality/Colors: Highest (32 bit)

3 Driver installation

3.1 CRANEX D driver installation

NOTE! *Before installing a PCI driver, the PCI board must be installed. Refer to the instructions in the CRANEX D Installation Manual.*

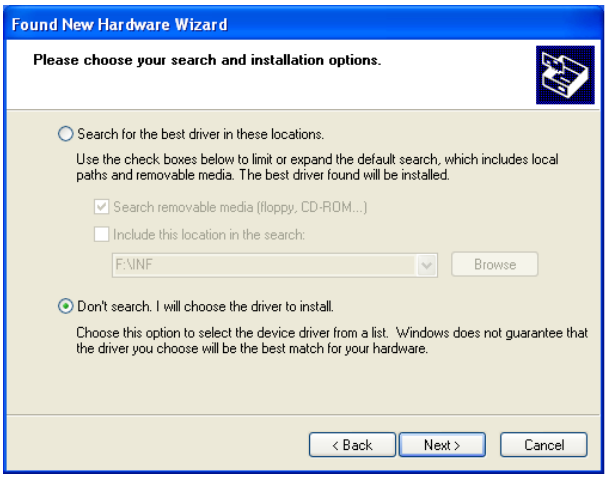
When the PC is switched on for the first time after PCI board installation, Windows recognizes the hardware changes and launches a wizard. Follow the instructions on the screen to install the PCI driver.

NOTE! *The screenshots are from Windows XP.*

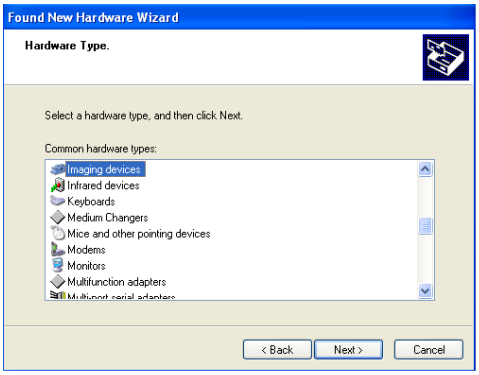
1. Windows recognizes the hardware changes. Select *Install from a list.* Click **Next**.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
PCI Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

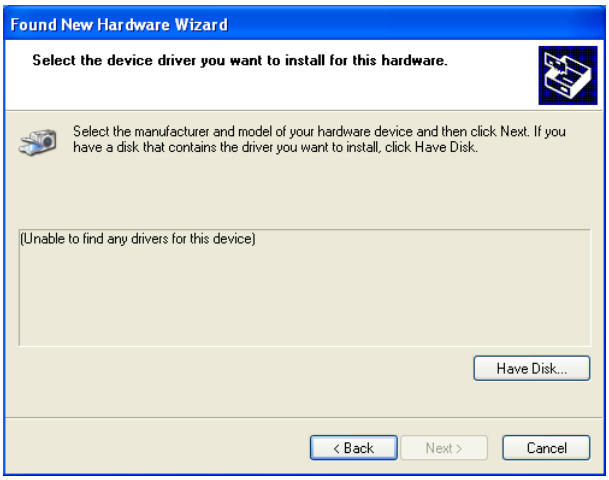
2. Select *Don't search.* Click **Next**.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
F:\INF
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

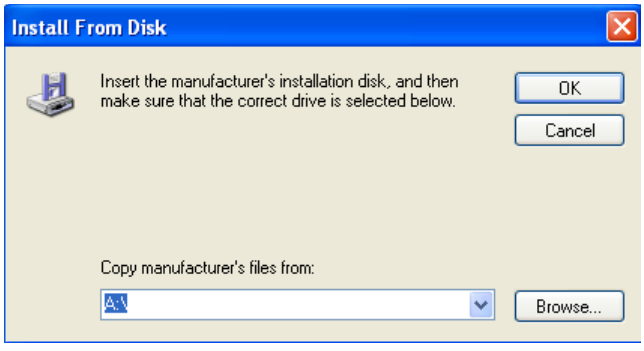
3. Select *Imaging devices* and Click **Next**.



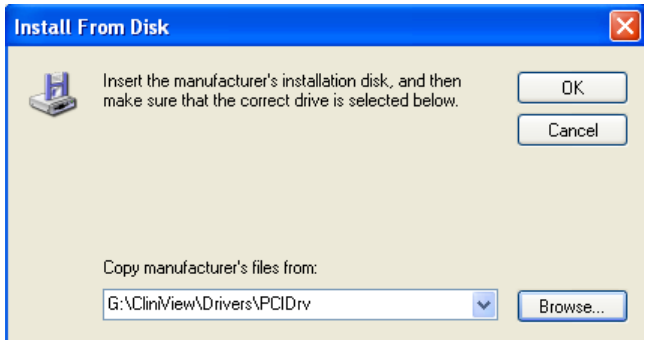
4. Click **Have Disk**.


Found New Hardware Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
(Unable to find any drivers for this device)
Have Disk...
< Back
Next >
Cancel

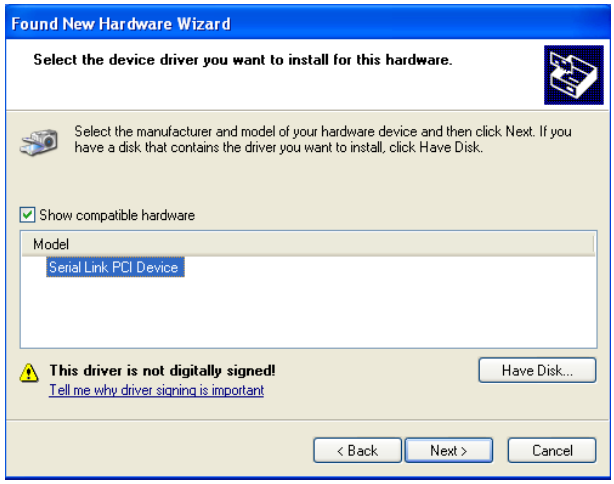
5. Insert the software installation DVD into the DVD-ROM and browse the PCI driver (DdxDrv.inf) from path <SCANORA DVD>\Drivers\PCIDrv.



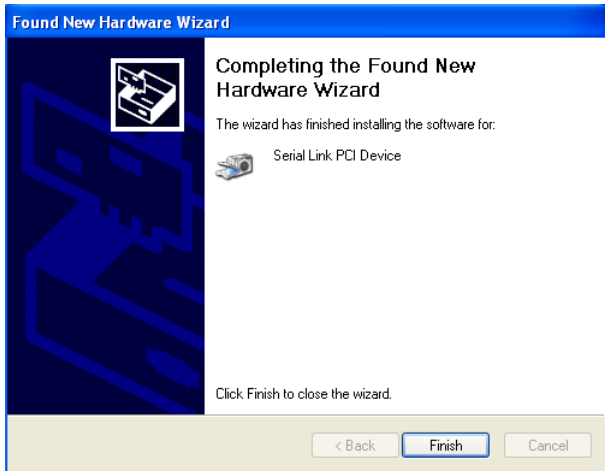
6. Click **OK**.



7. Click **Next**.


Found New Hardware Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
Serial Link PCI Device
This driver is not digitally signed!
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

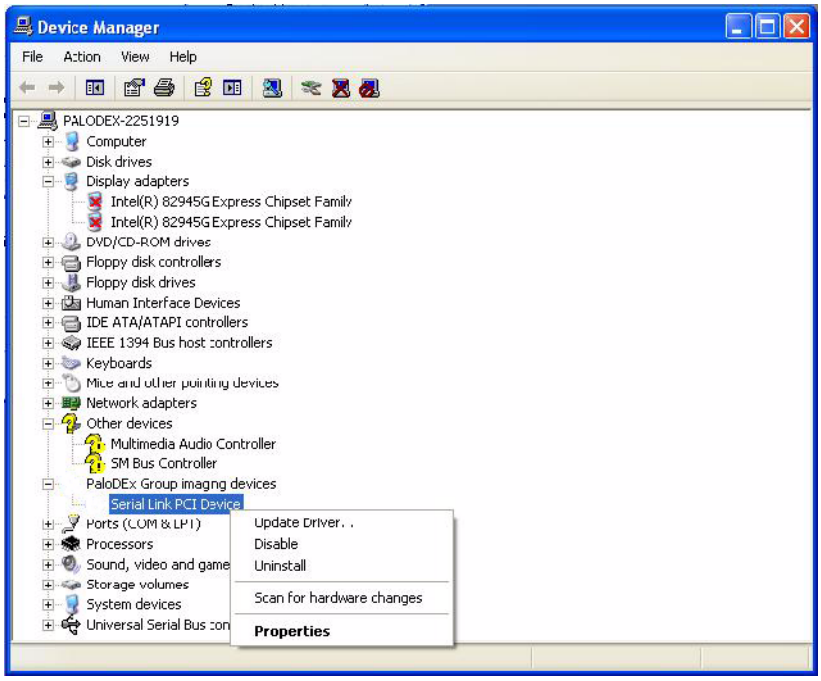
8. The PCI driver is now installed. Proceed to software installation. If the driver installation fails, proceed to the chapter ‘Uninstalling the driver’.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Serial Link PCI Device
Click Finish to close the wizard.
< Back
Finish
Cancel

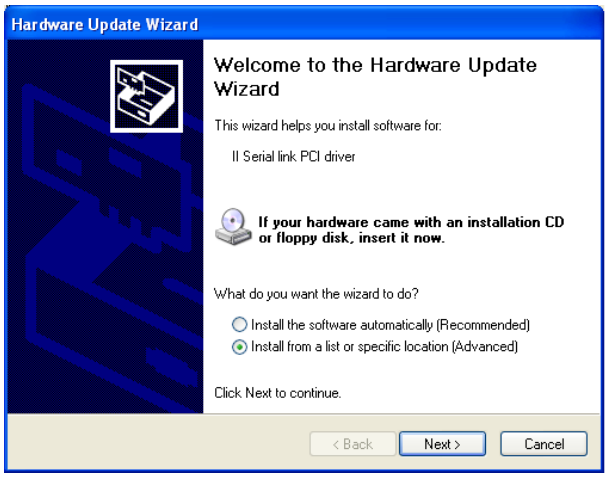
3.1.1 PCI driver update

Update the PCI driver as follows:

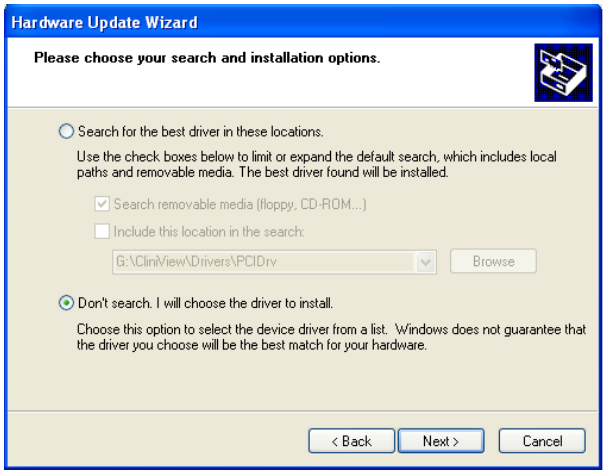
1. Right-click **My Computer** and choose **Manage**
2. Choose **Device Manager**
3. Right-click II Serial link PCI driver (SOREDEX devices)



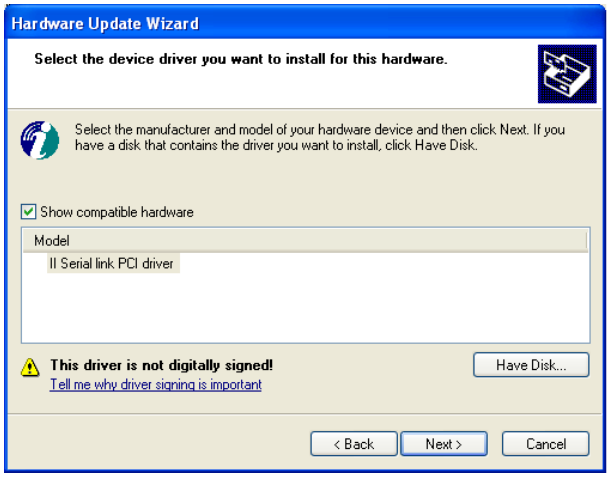
4. Click **Update Driver…**
5. Select *Install from a list.* Click **Next**.


Hardware Update Wizard
Welcome to the Hardware Update Wizard
This wizard helps you install software for:
II Serial link PCI driver
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

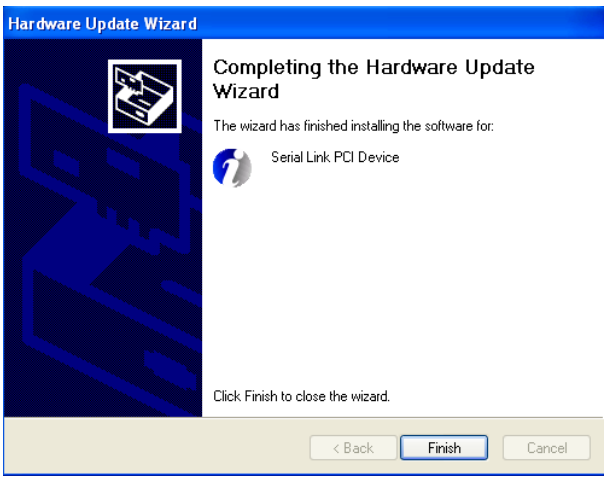
6. Select *Don't search.* Click **Next**.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
G:\CliniView\Drivers\PCIDrv
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

7. Click **Have Disk** and browse a new PCI driver (DdxDrv.inf) from the software version 3.1.0 or later DVD. Click **Next**.


Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
II Serial link PCI driver
This driver is not digitally signed!
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

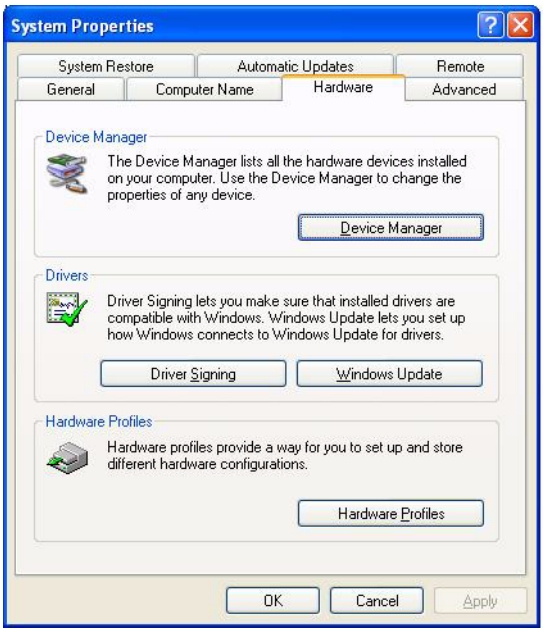
8. The PCI driver is now updated.

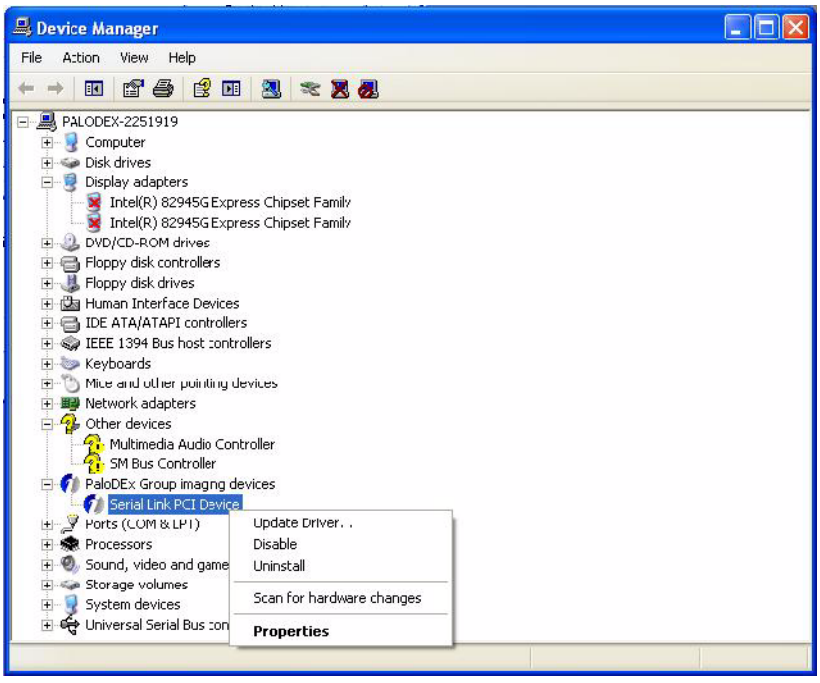


3.1.2 Uninstalling the driver

If the driver installation fails, remove the driver and then reinstall it. The procedure is as follows:

1. Click **Control Panel/System** and select the hardware tab. Click the driver and select **Uninstall**. Click **OK**.


System Properties
System Restore
Automatic Updates
Remote
General
Computer Name
Hardware
Advanced
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply



2. Click **Add/Remove Hardware** in the control panel.

3.2 Intraoral camera installation

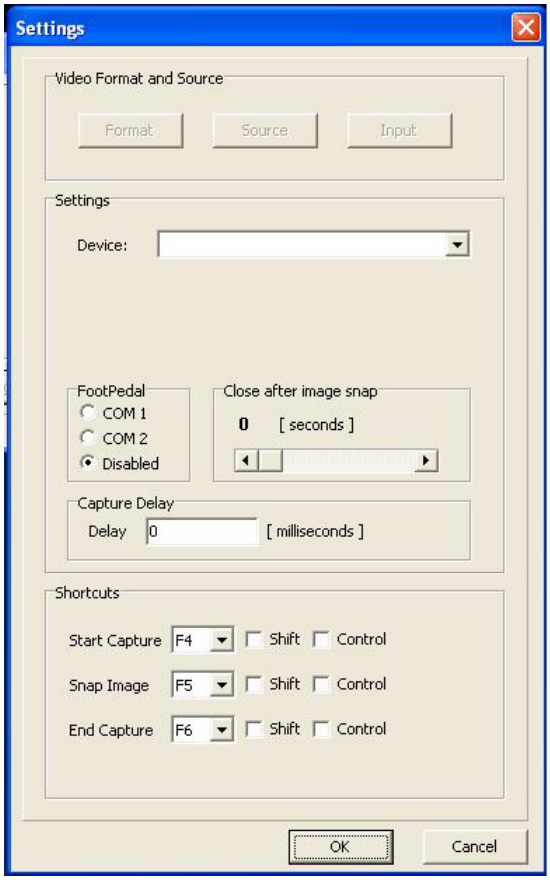
The software supports image capturing with WDM (**W**indows **D**river **M**odel) and VFW (**V**ideo **F**or **W**indows). WDM is recommended for the software.

Install the video capture card and the drivers supplied with your intraoral camera, following the intraoral camera's installation instructions.

To enable intraoral camera capture select IntraCam in Tools ⇒ Settings ⇒ Installed devices. Clicking **Intraoral camera capture** opens the intraoral camera window. Click **Settings** to open the settings dialog.

To hide intraoral camera capture button de-select IntraCam in Tools ⇒ Settings ⇒ Installed devices.

To achieve the best possible image quality, it is recommended that the camera device is checked.
Click **Settings** to open the settings dialog.



Normally the device is selected automatically.

Use '*Close after image snap*' slide bar to specify how many seconds a capture image stays top of the screen after capturing.

Use '*Capture Delay*' to prevent camera shake caused by button press. It is the delay between IntraCam's button click and actual image capture. Set the value in the Delay editbox of IntraCam's settings dialog.

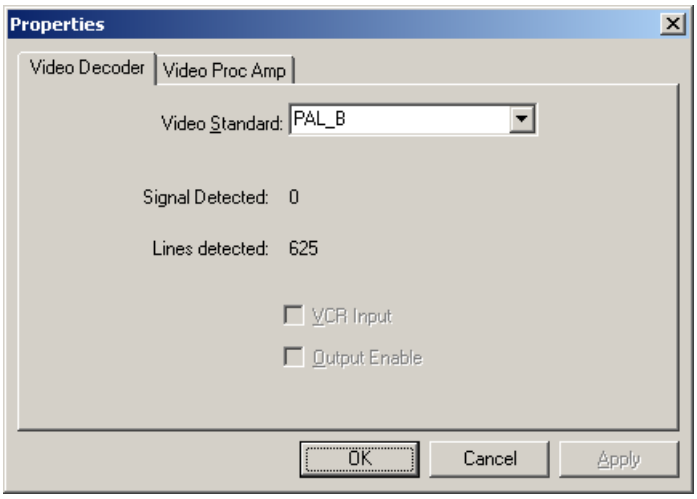
Use '*Shortcuts*' to configure shortcut keys to start capture session, snap image and end capture session. The default values for the same are -

- Start capture F4
- Snap image F5
- End capture F6

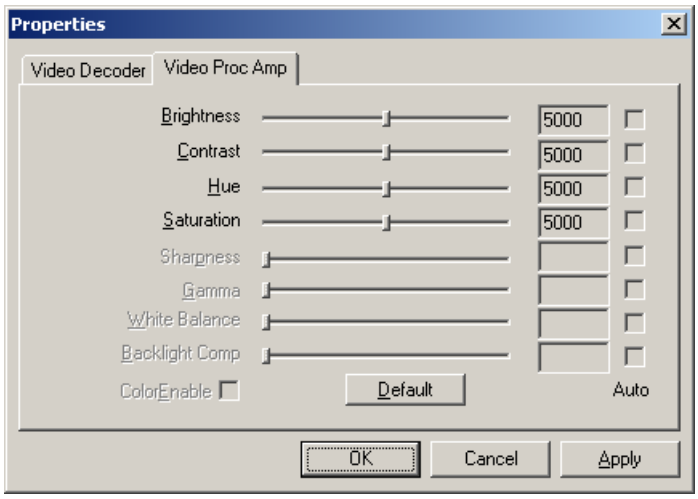
NOTE! *The software supports Dürr Dental's PC-COM port connectable 3-button foot pedal.*

3.2.1 Video Format dialogs

Click **Format** to open the window.



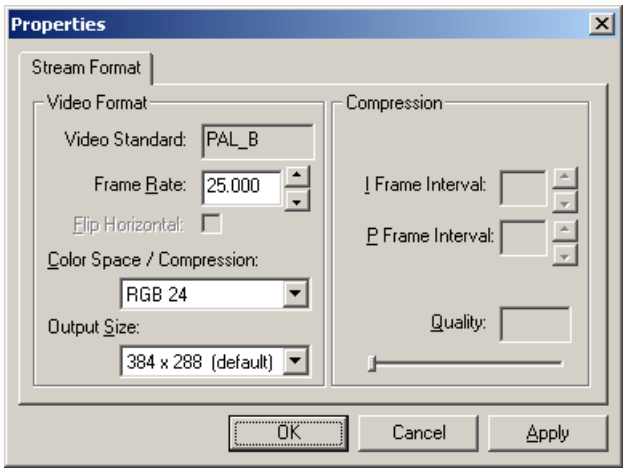
Select the used Video Standard on Video Decoder tab. These alternatives vary according to camera manufacturer and country.



Adjust e.g. the brightness, contrast, hue and saturation. These alternatives vary according to camera manufacturer.

3.2.2 Video Source dialog

Open the Video source dialog by clicking **Source**.

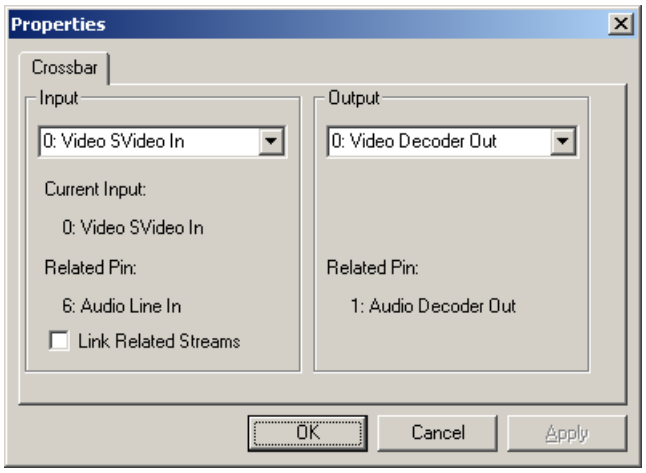


Select the requested dimensions for the camera window from the Output Size list.

Select the requested color setting from the Color Space list. It is recommended to use 24-bit RGB. These alternatives vary according to camera manufacturer and country.

3.2.3 Video Input dialog

Click **Input** to open the window.

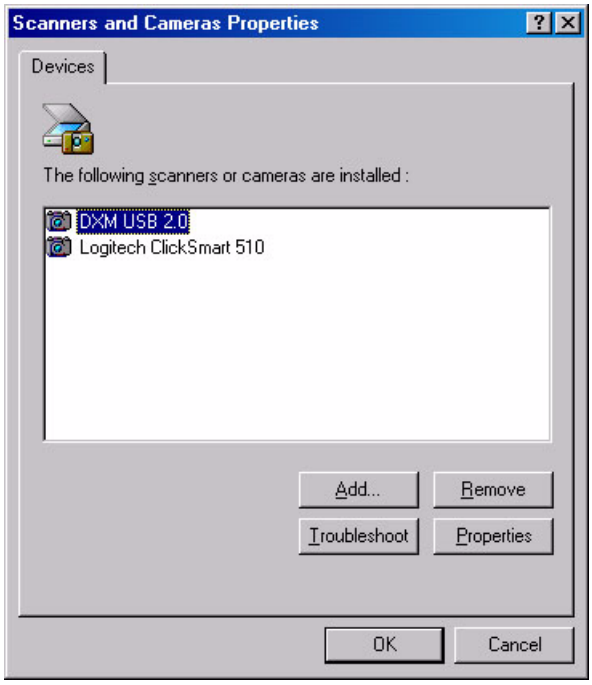


Select the used input video connector from the Input list, S-video is recommended.

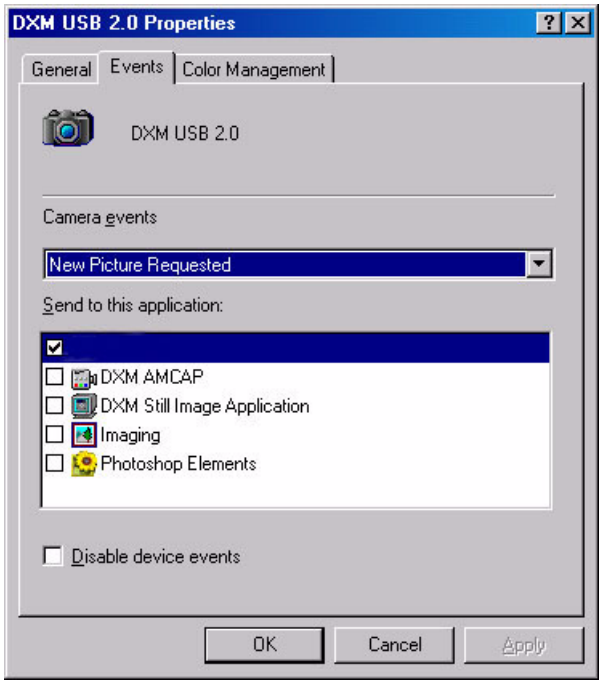
3.2.4 Link the software to Intra camera event

If Intra Camera supports events, link the software to the Intra camera event, e.g. "Snapshot Button Pressed" event. When the Intra camera's snapshot button is pressed, the software retrieves an image automatically.

1. Open Scanners and camera properties in the Control Panel. Select your Intra Camera from the devices list and click **Properties**.



2. Select Events Tab.



3. Select "New Picture Requested" from the Camera Events list and *Enable SCANORA* option from the lower list.
4. Change the Camera event to "Snapshot Button Pressed" and Enable *SCANORA* option.
5. Before the configuration is valid reboot your PC.

NOTE! *If the Events tab is not displayed, then this feature is not available for the selected Intra Camera.*

4 Configuring DICOM

Before using the software DICOM features the DICOM option must have been installed and the system should be configurated.

NOTE! *The software DICOM is a licensed feature. A DICOM license key must have been given in either during the software client installation or in the software Manager application, after the installation.*

To perform the software DICOM configuration, you need the following information (this information is normally provided by the local network administrator):

- Network configuration information for the software workstation
- Port numbers for DICOM configurations
- IP addresses
- AE titles for the software entities
- AE titles, Port numbers and IP addresses for the needed DICOM devices
  - Storage server
  - Storage Commitment
  - Printer
  - Worklist
  - Query/retrieve

The IP addresses, port numbers and AE titles for all connections can be obtained from the hospital´s ADP personnel & suppliers.

NOTE! *Access to the DICOM configuration settings is allowed to administrator users only. Either run the software explicitly with administrator rights or in Windows XP use an Windows user account that has administrator rights.*

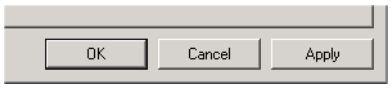
The DICOM configuration window

The tabbed pages

The DICOM configuration window includes a tabbed set-up/property page for each of the features selected when the DICOM addition was installed. If all four features were selected, there are six tabbed set-up/property pages. These are:

General	Storage
Print	Worklist
Query/Retrieve	Storage SCP
SOP Classes	

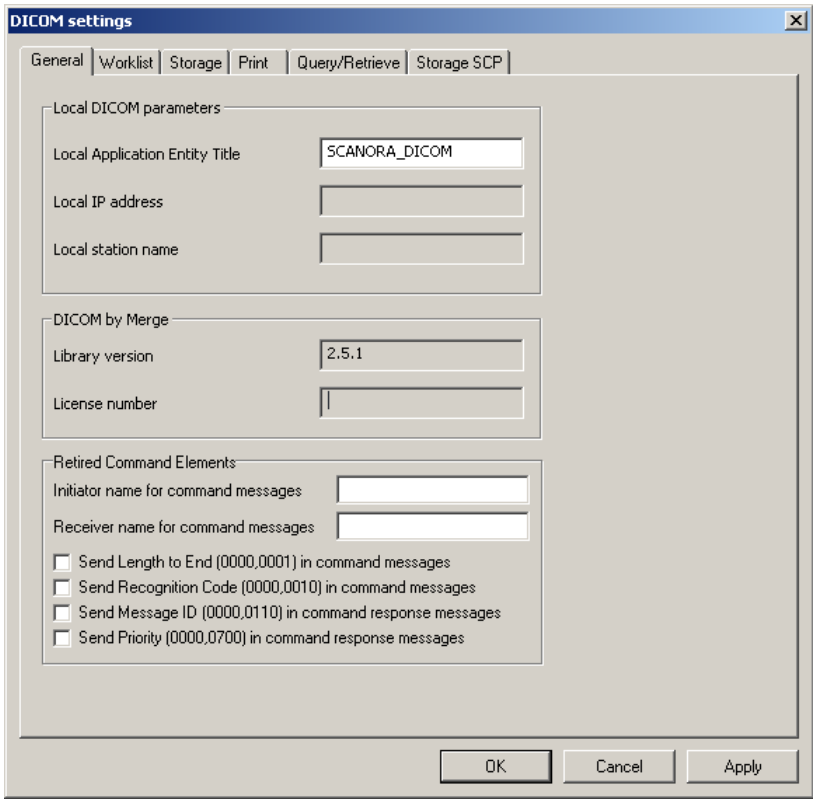
The main configuration buttons:
After making configuration changes, click **Apply** or **OK** at the bottom of the DICOM configuration window to accept the changes.



- Apply button
  Click to save changes. The DICOM configuration remains open.
- Cancel button
  Changes are not saved and the DICOM configuration closes.
- OK button
  Click to save changes. The DICOM configuration closes.

4.1 General page

The General page gives an overview of the Local DICOM parameters.



The "Local Application Entity Title" is the DICOM name for the software. The name must be 1 to 16 characters in length (letters A -Z and/or numbers 0 -9) with no spaces.

Contact the (hospital) administrator to obtain the correct "Application Entity Title" (AE-title).

4.1.1 DICOM License number

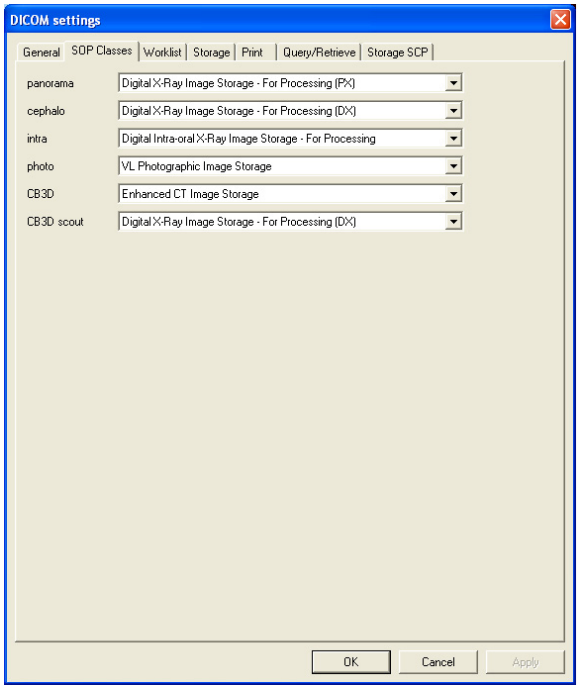
The DICOM license key is managed through the license key of the software. The license key of the software is entered either during the software client installation or in the software Manager after the installation.

4.1.2 Retired Command Elements

Controls are provided to select how the software uses the command elements that have been retired from the DICOM standard 3.0. It is recommended to leave these controls empty.

4.2 SOP Class configuration

The software allows to configure which SOP Class is used to correspond the image types of the software.



Panoramic images:

- Digital X-Ray Image For Processing (PX) (default)
- Digital X-Ray Image For Presentation (PX)
- Digital X-Ray Image For Processing (DX)
- Digital X-Ray Image For Presentation (DX)
- Computed Radiography Image Storage

Cephalometric images:

- Digital X-Ray Image For Processing (DX) (default)
- Digital X-Ray Image For Processing (DX)
- Computed Radiography Image Storage

Intra images:

- Digital X-Ray Image For Processing (DX) (default)
- Digital X-Ray Image For Processing (DX)
- Digital Intra-oral X-Ray Image Storage -For Processing
- Digital Intra-oral X-Ray Image Storage -For Presentation

Photographic images:

- VL Photographic Image Storage (default)
- Secondary Capture Image Storage
- Multi-frame Grayscale Byte Secondary Capture Image Storage
- Multi-frame Grayscale Word Secondary Capture Image Storage
- Multi-frame Truecolor Secondary Capture Image Storage

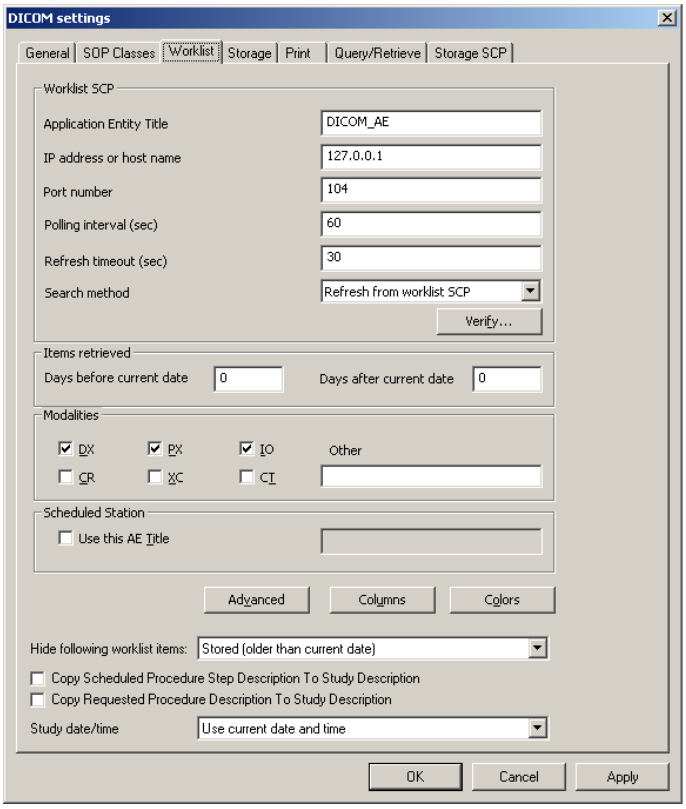
CB3D

- Enhanced CT Image Storage (default)
- CT Image Storage

CB3D scout

- Digital X-Ray Image For Processing (DX) (default)
- Digital X-Ray Image For Processing (DX)
- Computed Radiography Image Storage

4.3 Worklist configuration



The DICOM Modality Worklist Server allows information about patients to be obtained from the Hospital Information System. The software supports the Modality Worklist Service as a Service Class User. The Modality Worklist Service Class Provider is a program which purpose is to provide information to the Modality Worklist Service Class User. Worklist Page allows a connection to the Modality Worklist Service Class Provider (SCP) to be configured.

4.3.1 WorkList SCP Box

AE Title
This option specifies the Application Entity Title for the SCP application.

The AE Title is a characters string with a maximum length of 16 characters. The AE Title is a DICOM name for a DICOM Modality Worklist Service Class Provider (SCP) which can receive DICOM queries from the software.

Host Name
Is the remote host name or its IP-Address. For example: 10.1.1.0.

Port
Is the TCP port on which the remote DICOM system listens for connections. The default DICOM port number is 104. Obtain from the (hospital) administrator.

Polling interval (sec)
Specifies the polling interval in seconds, the software makes queries to the Modality Worklist SCP.

If 0 seconds is set here, no polling is done. The user has to update the contents of the worklist dialog with the Refresh button when needed. This setting is not available in the *Search from worklist SCP mode*.

Refresh Timeout
This value specifies the timeout, that the application waits for the worklist service to finish the refreshing. The value is given as seconds.

Search method
If *Refresh from worklist SCP mode* is selected, the manual refreshing of the worklist, cause the worklist query (C-FIND) to be sent to the Worklist SCP. This is the recommended option for cases, where the C-FIND operations are fast or the user wants full control of the refreshing.

If *Refresh from local database mode* is selected, the manual refreshing does not send a Worklist query, but only reads the latest data from the local worklist database. This local database has the results of the worklist polling done on the background. Note: make sure the polling is enabled. This is the recommended option for cases, where the C-FIND operations take a relatively long time.

If *Search from worklist SCP mode* is selected, the Worklist SCP is searched directly for worklist items using only the filters provided in the worklist search dialog. There is no automatic polling, but the C-Find query is sent only when the user initiates the search. This mode is potentially the slowest, but provides the most control for the user.

The Verify Button
See the Storage Page in this manual for more information.

4.3.2 Search for worklist items by date

Set the number of day(s) before and after today that are taken into account in worklist search. Using values 0 and 0 here, means that only worklist items scheduled for today are queried from the worklist server. This setting is not available in the Search from worklist SCP mode.

4.3.3 Modalities Box

Checking the modality boxes allows the chosen modalities to be retrieved from the Modality Worklist SCP.

Modality	**SOP Class Name**
DX	Digital Radiography
IO	Intraoral Radiography
PX	Panoramic X-Ray
CR	Computed Radiography
XC	External camera Photography
CT	Computed Tomography
Other	User-defined modlity: can be left empty, in which case modality is not used as a search criteria. Also several modalities can be defined (separated by a space).

This setting is not available in the *Search from worklist SCP mode*.

4.3.4 Scheduled Station

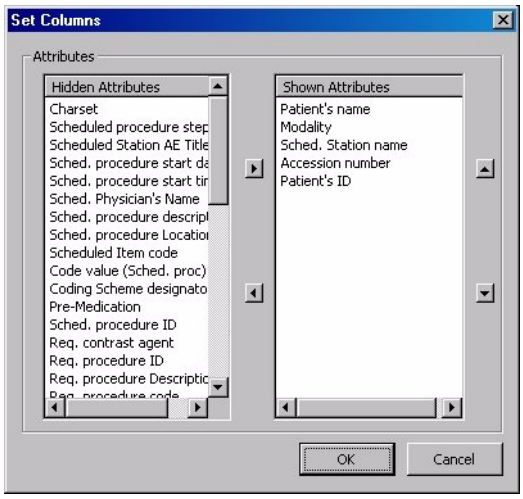
This option can be used to retrieve only the items scheduled for the specified workstation (AE Title). This setting is not available in the *Search from worklist SCP mode*.

4.3.5 Worklist Page buttons

Columns button

Define the attributes and the order in which they appear in the Worklist window in the “Set Columns” dialog. Click **Columns** and the “Set Columns” window opens. The Set Columns window is divided into two lists:

1. Hidden Attributes List.
2. Shown Attributes List.



The "Shown Attributes" list includes the attributes that appear in the software Worklist window. The attributes in the hidden attributes list does not appear in the window.

To move the attributes from one list to another:

– Click on the attribute to move (the attribute changes color). Click the arrow to move the attribute in the direction required.

or

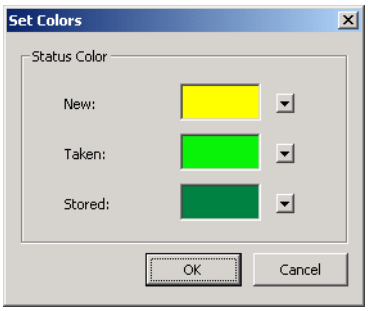
– Click on the attribute to activate it. Without releasing the mouse button, drag the attribute to the other list or within the list to change the place of the attribute, then release the mouse button (drag and drop).

NOTE! *All the changes made in the 'Columns' window remains temporary after clicking* **OK**. *To save the changes permanently, click* **OK** *or* **Apply** *in the DICOM Worklist configuration tab.*

Colors button

Click **Colors** and the “Set Colors” window appears. To change a status color, click the appropriate arrow button beside each color.

A “Color selection” window appears.



Select a basic or custom color for the required status and click **OK**.

NOTE! *All the changes made in the 'Color' window remains temporary after clicking* **OK**. *To save the changes permanently click* **OK** *or* **Apply** *in the DICOM Worklist configuration tab.*

Advanced button

The "Log Files" and "Performance" pages provide parameters for adjusting the low level settings of the DICOM network services. There are similar settings for all the DICOM network services. See chapter 4.8, Log File and Performance Settings.

4.3.6 Other options

Hide following worklist items

Choose the option that suits best.

Option	Effect
None	Items are not hidden
Older than current date	All items older than current date are hidden
Stored (older than current date)	All items that are stored and older than current date are hidden

Copy Scheduled Procedure Step Description to Study Description

If this option is selected then Scheduled Procedure Step Description is copied automatically to the Study Description tag.

Copy Requested Procedure Description to Study Description

If this option is selected then Requested Procedure Description is copied automatically to the Study Description tag.

Study date/time

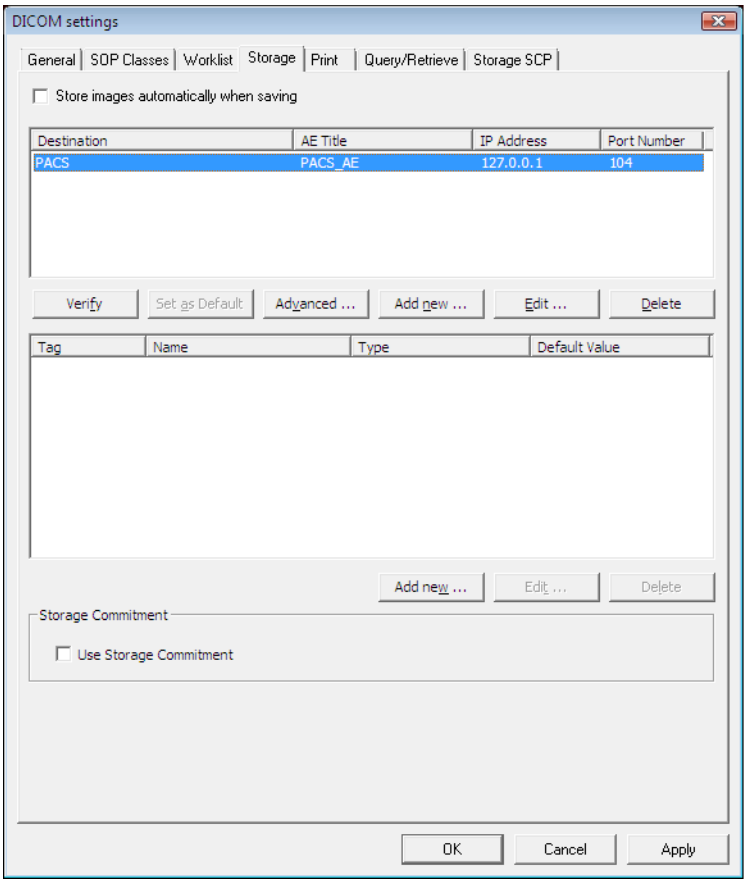
This setting controls how the Study Date and Study Time tags of a new study are filled, when the study is created from a worklist item, that lacks the Study Date and Study Time values.

4.4 Storage and Storage Commitment configuration

The Storage page allows the storage and storage commitment parameters to be defined. When this page is opened for the first time after installation, two empty lists appear.

-The Storage Destination List (upper).

-The Storage Attributes List (lower).

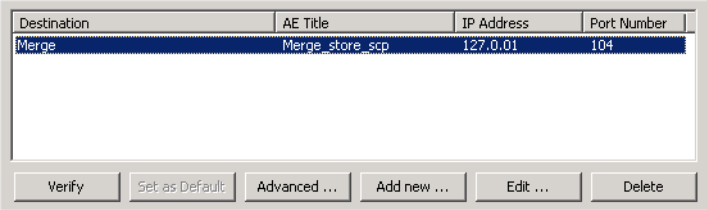


The Storage Destination List (upper).
Add storage servers to the storage server destination list, e.g. DICOM ARCHIVES.

The Storage Attributes (Tag) List (lower).
Add and edit DICOM Tag information to the tag list.

4.4.1 Storage page - Destinations

Storage page - Add new... button



Allows a new destination for the images to be added. Click **Add new** and the “Add New Destination” window appears.

Fill in the fields as follows:

1. Destination: Section describing a remote DICOM application. Client refers to the destination by a DICOM Application Entity Title (AE Title) and this is the same way it is referred to in the application profile. A destination name can be, for example, DICOMArchive.

2. AE Title: The AE Title is a string of 16 characters or less with no spaces, for example, STORAGE_SCP

NOTE! *The AE Title string is case sensitive*

3. IP Address: a remote host name or its IP address, for example, 10.0.0.2.
4. Port: a TCP port which the remote DICOM system listens to. The default DICOM port number is 104. Obtain from the (hospital) administrator.
5. If Storage Commitment -feature is used, define the Storage Commitment SCP settings: either choose the "Use the same destination for Storage Commitment" -option or define the Storage Commitment SCP AE Title, IP address and TCP port explicitly. (Note! Port number must not be greater than 65535).

When defined the storage destination, click **OK**. The storage page appears with the new destination in the upper list and the attributes in the lower list.

This indicates that you have successfully added a new destination to the storage application.

Repeat the above steps each time to add a new destination.

Storage page - Delete button

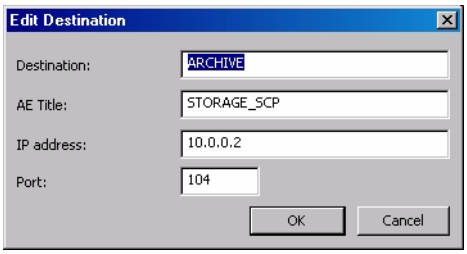
Allows a destination to be deleted from the destination list. To do this:

1. Select the destination to be deleted, the line is highlighted.
2. Click **Delete**.
3. A delete confirmation message appears.
   Click **Yes** to delete the destination.

Storage page - Edit... button

Allows the destination information in the storage destination list to be changed. To do this:

1. Select the destination to be edited, the line is highlighted.
2. Click **Edit**.
3. The Edit Destination window appears.



4. Edit the destination information.
5. Click **OK** to accept the changes. The destination information in the storage window is updated.

Storage page - Advanced... button

The "Log Files" and "Performance" pages provide parameters for adjusting the low level settings of the DICOM network services. There are similar settings for all the DICOM network services. See chapter 4.8, Log File and Performance Settings.

In addition to the settings common to all services, there are following Storage SCU specific settings:

Retry count

The number of retry attempts to made if the storing of an image has failed. Use 0 to disable the retrying.

Retry interval

The time period, in minutes, that is waited between the retries.

Storage page -Set as Default button

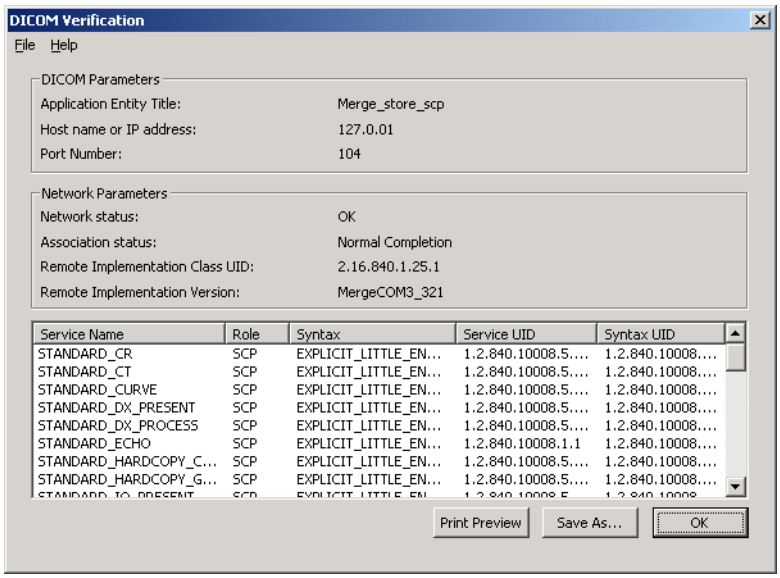
Allows the default destination to be set if there are more than two destination places in the Destination List.
Select the destination entry to be set as the default.
Click **Default** to set this destination as the default.

Storage page -Verify button DICOM Verification:

All communications and image transfer with the remote application are accomplished using the DICOM protocol over a network using the TCP/IP protocol stack.

Verify application level communication between DICOM application entities (AE's), click **Verify**. If there are no selected items (highlight) in the destination list, the Edit, Delete, Set as Default, and Verify buttons are disabled. Select the destination item to be verified. All buttons are enabled. Click **Verify**.

The DICOM Verification window gives information on the state of communication between the destination and computer. If communication is successful, a verification window appears showing all the parameters.



The 'DICOM parameters' are from the destination. The 'Network Parameters' are parameters that provide information about the status of the communication with that remote entity. If communication fails, the 'Network status' is *Failure*, and the 'Association status' explains the cause of the failure, for example "Failed to connect to remote host". NA appears in both the Remote Implementation Class UID and Remote Implementation version and the list of services is empty.

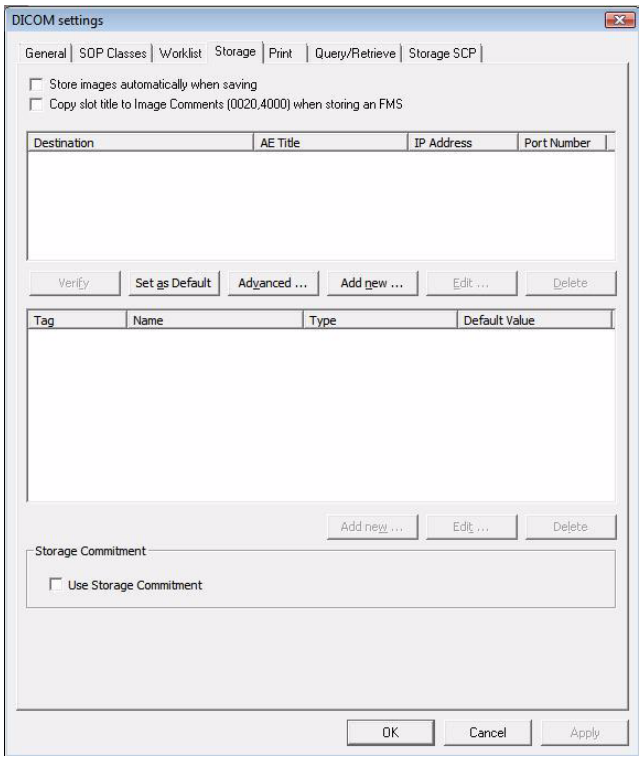
The results of the communication between entities can be printed or saved.

To save select *File* ⇒ *Save as*... or click **Save**.

To print select *File* ⇒ *Print* or click **Print**.

4.4.2 Storage page -Attributes List buttons

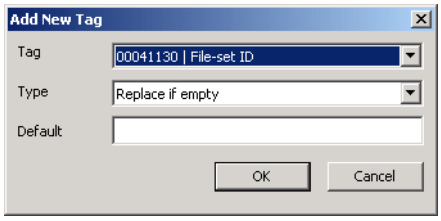
If the focus of the window is in one of the destinations in the storage destination list, only **Add New** is enabled. Once the focus (the line is selected) is put into one of the attributes in the storage attributes list, the rest of buttons are enabled.



The Attributes list includes default attributes for the DICOM application. Add and edit the attributes or delete them from the list.

Attributes list - Add new... button

To add a new attribute to the storage attribute list, click **Add New**. The “Add New Tag” window appears:



A message is constructed from attributes having values, and each attribute is identified by a tag. An attribute is a unit of data (e.g., Patient's Name, Patient 10, ...). A tag is a 4-byte number identifying an attribute (e.g., 00100010H for Patient's Name, ...).

A tag is usually written as an ordered pair of two-byte numbers. The first two bytes are sometimes called a group number, and the last two bytes are called an element number (e.g., (0010,0010), (0038, 001C),...). This terminology is partly a remnant of the DICOM Standard.

DICOM specifies Information Object Definitions (IOD's) as being composed of modules. Each module contains attributes. Attributes can be required, optional, or only required under certain conditions (conditional attributes). Conditional attributes are always specified along with a condition.

Storage list - Edit... button

To change information of one of the destinations' attributes that is already in the storage attributes list, perform the following steps:

1. Select the attribute to be changed (the line is selected).
2. Click **Edit**. The Modify Tag window appears.
3. Enter the new information and click **OK**. The changes appear in the storage attributes list.

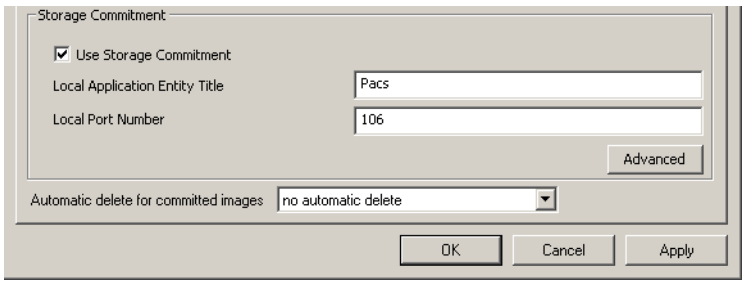
Storage list - Delete Button

Allows an attribute to be deleted from the storage attributes list. To do this:

1. Select the attribute to be deleted (the line is selected).
2. Click **Delete**.
3. A delete confirmation message appears.
   Click **OK** to delete the attribute.

4.4.3 Storage Commitment settings

The Storage Commitment -feature can be enabled or disabled with the check box control.



When enabled, both the storing of images and requesting commitment for the images use the software Storage SCU Application Entity. The details of this AE must be configured: AE Title and Port number. Contact the local system administrator to get these values.

NOTE! *Do not use the same AE Title and port number as in Storage SCP.*

Automatic delete for committed images

When the Storage Commitment -feature is enabled, an automatic image deletion can be defined. Only the images that are successfully committed are affected by this feature. If the patient is left with no images after the image deletion, the patient is also deleted. Log entry of the deletions will be made into the System Log, see chapter System Logs. All deleted images are put into the Trash (see chapter Trash), from where they can be either restored or permanently deleted. The following options are available for automatic deletion:

- no automatic delete
- delete immediately after commitment
- delete 12 hours after commitment
- delete 24 hours after commitment
- delete 48 hours after commitment.

NOTE! *Use this feature carefully, since it removes captured X-ray images from the software without user's explicit acceptance for each image, and the images may need to be retrieved from the PACS, if they are needed.*

Storage Commitment - Advanced

Maximum retry count for failed Commitment attempts

This parameter defines the number of retries to be made if the Storage Commitment attempt fails for some reason. Use 0 to disable the retry feature.

Retry interval for failed commitment attempts

This parameter defines the wait time period between the retries. Minutes are used.

Wait for commitment report in N-ACTION Association

Some Storage Commitment SCPs are able to send the Storage Commitment report within the same association as the Storage Commitment request. This attribute defines the time period, in seconds, that the software Storage Commitment SCU waits for the report message. Use 0 to always require separate association to be used for the Storage Commitment report.

Wait time for storage commitment report

The time period, in minutes, that Storage Commitment SCU waits for Storage Commitment report after requesting it. After this time period expires, the status of the Storage Commitment task goes either into Waiting for Storage Commitment Retry,if the retrying is enabled and there are retries left, or to Storage Commitment Failed. Reports can still be received, and they are processed, even after this timeout has expired.

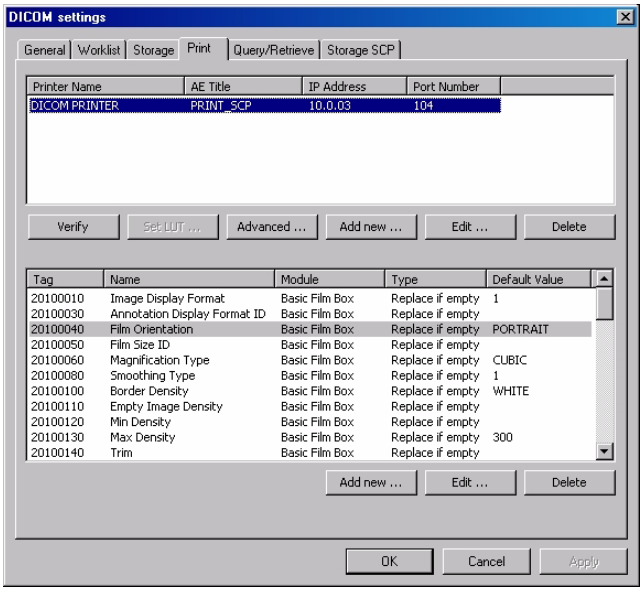
Delay between storage and commitment

The time period that Storage Commitment SCU waits after Storage before sending the Storage Commitment request.

4.5 Print configuration

Open this page for the first time after installation, and see two empty lists.

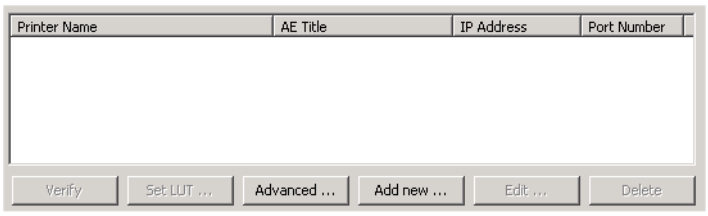
1. The Print Destination List.
2. The Print Attributes List.



Print Destination List.
To the Print Destination List add DICOM printers.

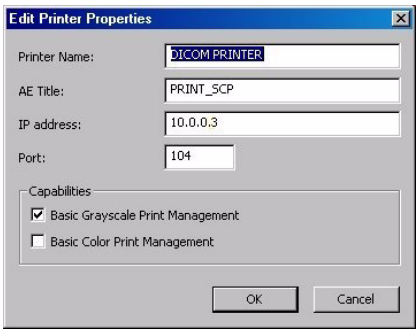
Print Attributes (Tag) List
To the Print Tag List add settings for every DICOM printer, e.g. media size.

4.5.1 Print page - Destinations



Print page - Add new... button

Add a new DICOM printer by clicking **Add new**.



Complete the fields as follow:

1. Printer name:
   Application refers to the printer by a DICOM Application Entity Title (AE Title) and this is the same way it is referred to in the application profile. In this field, enter a name for AE Title, for example DICOM_PRINTER.
2. AE Title:
   Obtain from the (hospital) administrator, for example PRINT_SCP.
3. IP address:
   Obtain from the (hospital) administrator, for example 10.0.0.3.
4. Port:
   The TCP port on which the remote DICOM system listens for connections. The default DICOM port number is 104. Obtain from the (hospital) administrator.
5. Capabilities:
   If the DICOM printer supports grayscale OR color printing, select
   – Basic Grayscale Print Management
   – Basic Color Print Management

If the printer supports both printing modes, select either or both modes. Refer to the operating manual supplied with the DICOM printer for more information.

Click **OK** after entering all the required information.

A print page appears, which indicates that a new printer has been successfully added to the list.

The top list shows the configuration information that has been entered. The bottom list shows all the printer's attributes and their characteristics (Tag number, Name, Module, Type and default value).

Repeat the above procedure each time to add a DICOM printer.

Print page - Edit... button

Change the information in the printer list.

1. Select the printer to be edited.
2. Click **Edit**.
3. The Edit Printer Properties window appears.

Enter new printer information.

4. Click **OK** to accept the changes. The destination information in the printer destination window is updated.

Print page - Delete button

Delete a printer from the print list.

1. Select the printer to be deleted.
2. Click **Delete**.
3. A delete confirmation message appears.
   Click **Yes** to delete the printer.

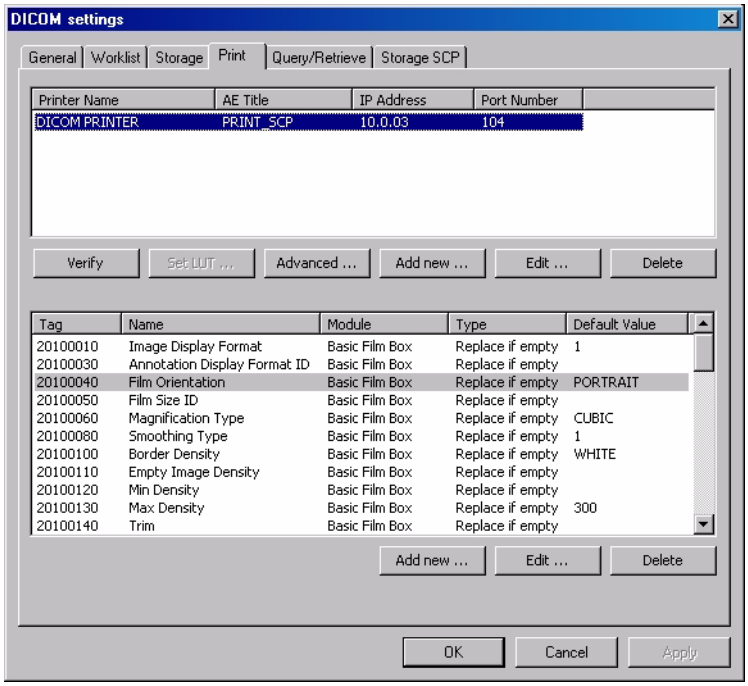
Print page - Advanced... button

The "Log Files" and "Performance" pages provide parameters for adjusting the low level settings of the DICOM network services. There are similar settings for all the DICOM network services. See chapter 4.8, Log File and Performance Settings.

Print page - Verify button
Verify DICOM printer connection.

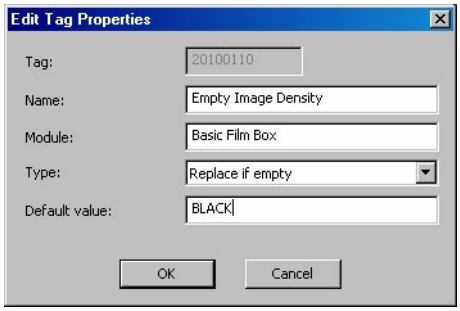
4.5.2 Print page - Attributes List buttons

With the attribute list buttons you can edit the printer default settings.



Edit... button
Select the attribute in the list, which is needed to be changed (the line turns blue).

Click **Edit**.



Check the correct default values from the printer documentation or (hospital) administrator. Enter new information and click **OK**. The changes appear in the Print Attributes list.

Delete button:
Delete an attribute from the print attributes list.

1. Select the attribute to be deleted.

2. Click **Delete**.

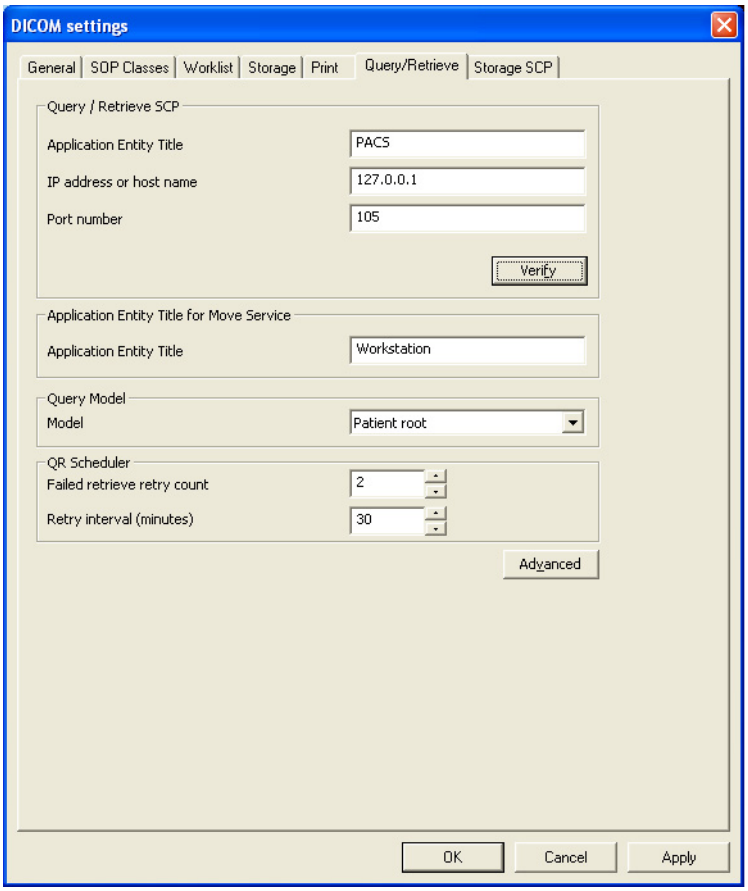
3. A delete confirmation message appears.

4. Click **Yes** to delete the print attribute.

4.6 Query / Retrieve configuration

The Query / Retrieve service provides a tool for search and retrieve of patients and images from image archives.

Query / Retrieve page:



Complete the fields as follow:

AE Title:
Obtain from the (hospital) administrator, for example QR_SCP.

IP address:
Obtain from the (hospital) administrator, for example 10.0.0.2.

Port:
The TCP port on which the remote DICOM system listens for connections. The default DICOM port number is 104. Obtain from the (hospital) administrator.

Verify button
See the **Verify** button in the previous chapters of this manual for more information.

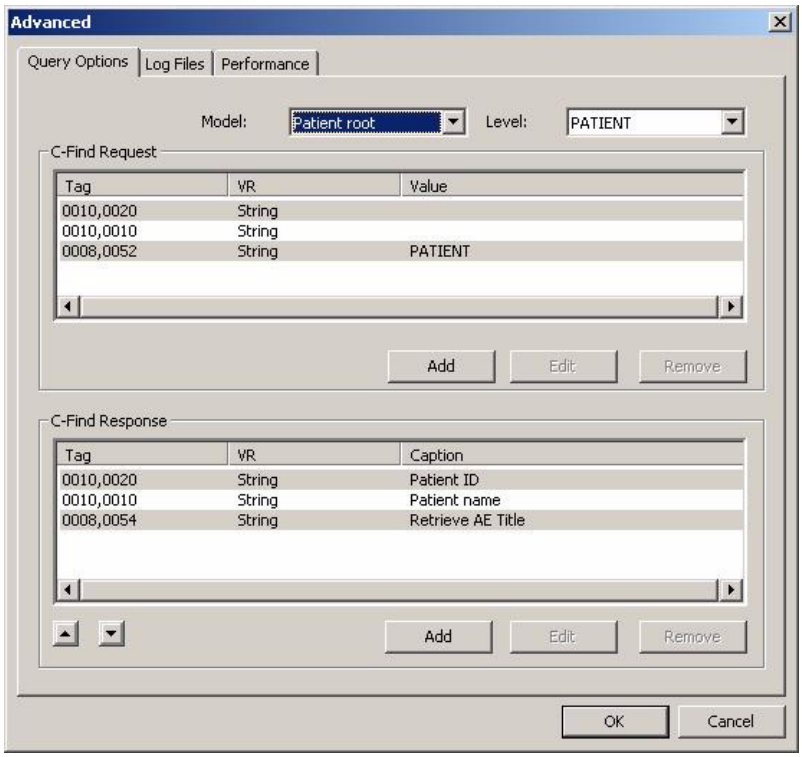
Application Entity Title for Move Service
Specify the AE Title of the target Application Entity, i.e. the AE where the retrieved images are sent. Typically, this is the local Storage SCP AE.

Query Model
Select either Patient Root or Study Root.

Failed Retrieve Retry Count
This is the limit for the retry attempts that would made after retrieving is failed. 0 means that not retries are done if the initial retrieve attempt.

Retry interval
This is the time interval in minutes, that will be waited between the retries.

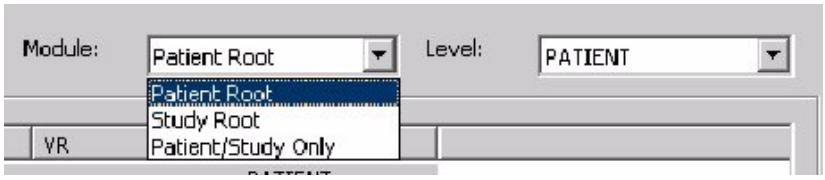
The Advanced Button
See or make any changes to the patient/image search, click **Advanced**. The Advanced window appears.



The Advanced window shows default patient search criteria, normally these can be left empty.

4.6.1 Query options

Editing default Query / Retrieve messages



From the module and level scroll boxes choose different types of query levels.

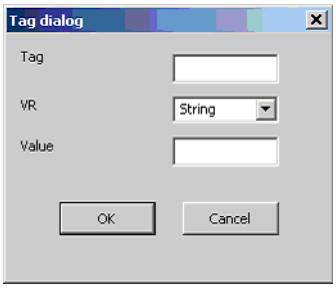
In these boxes the following information can be found:

Module	**Level**
Patient Root	– Patient – Study – Series – Image
Study Root	– Study – Series – Image

Add, Edit and Remove buttons

Click **Add** to increase the items in one of the lists (request or response).

The following dialog appears which allows relevant information to be entered into the fields.

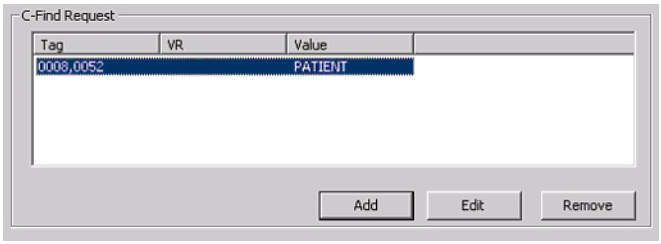


Remember that a Tag is usually written as an ordered pair of two-byte numbers. The first two bytes are sometimes called a ‘group’ number, with the last two bytes being called an ‘element’ number (e.g., (0010, 0010), or (0038, 001C)).

The VR or Value Representation can be thought of as the ‘type specifier’ for the values that can be assigned to an attribute. This includes the data type, as well as its format.

The Value is the variable to which the value stored in the attribute is assigned.

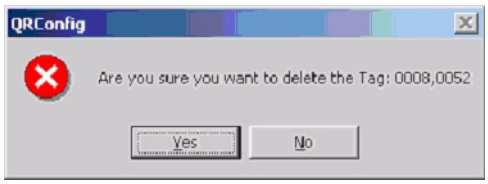
To change or remove one of the list items, first select the item in the list and then click the corresponding button.



The edit or remove dialog appears with the fields containing the data of the item to be changed or removed.

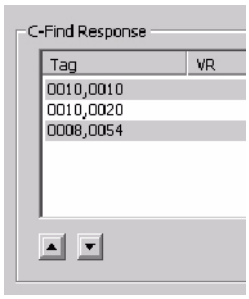
After the changes, click **OK** to accept them.

To remove an item, the following confirmation message appears.



Up and Down buttons

These buttons are located in the bottom left-hand corner of the advanced dialog in the C-Find Response group box. They can only be used with that list.



With the Up and Down buttons change the order of the list items. Select the item to move up or down the list and then click **UP/DOWN**.

4.6.2 The Log Files and Performance pages

The "Log Files" and "Performance" pages provide parameters for adjusting the low level settings of the DICOM network services. There are similar settings for all the DICOM network services. See chapter 4.8, Log File and Performance Settings.

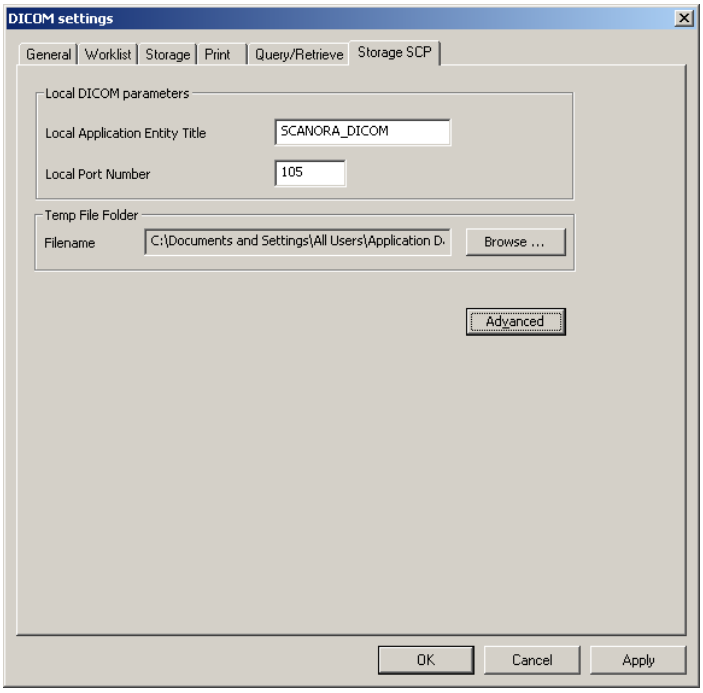
4.7 Storage SCP

Storage SCP page

The Storage SCP page allows the storage parameters to be defined. The service is used when a remote DICOM application sends the images to the software. The software works as Storage Service Class Provider (SCP) to the remote system.

Define the software storage service application entity title and TCP port number on the Storage SCP page.

NOTE! *Do not use the same AE Title and Port numbers for Storage SCP and Storage SCU (in chapter 4.4.3) services. Also port number must not be greater than 65535.*



Click **OK** or **Apply** to save the configuration parameters.

Temp File Folder

The folder on the local hard drive, where the retrieved images are saved temporarily before saving them to database, can be configured here.

Storage SCP page - Advanced button

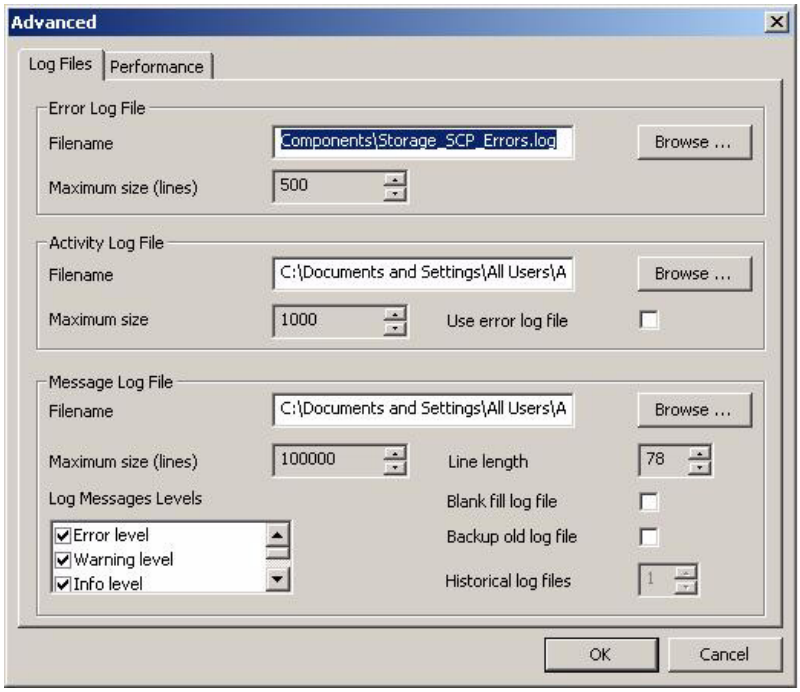
The "Log Files" and "Performance" pages provide parameters for adjusting the low level settings of the DICOM network services. There are similar settings for all

the DICOM network services. See chapter 4.8, Log File and Performance Settings.

4.8 Log File and Performance Settings

The **Log File Page** allows the configuration, the database, the error log file or the storage service log file destinations and parameters to be changed.

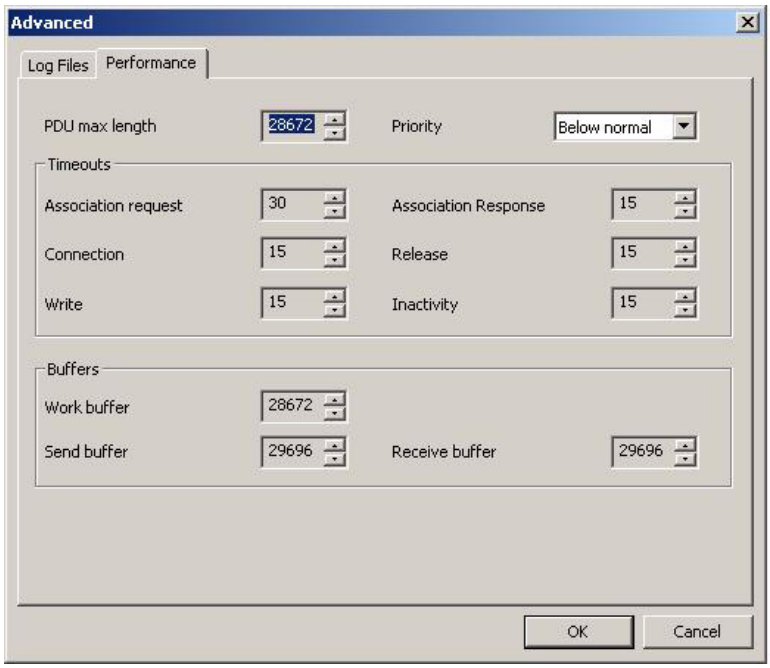
- *Configuration Database field:*
  Allows the database name (Data Source Name) and location (Filename) to be changed. Key in the specified path directly or click **Browse** and select the required name and location.
- *Write ODBC:*
  When the ODBC check box is selected, a new DSN entry is to be inserted into the system DSN list. Refer to ODBC and Microsoft Windows documentation for details.
- *Error Log File field:*
  Allows the errors log file name and its maximum size in bytes to be selected.
- *Storage Service Log File field:*
  Allows the Storage Service message log file to be selected and configured. The log file name, maximum size, the line length, and log message levels are configurable.



The Log message levels are as follows:

- Error level:
  This level logs error messages. These messages mainly occur when the network fails, or when reading in or writing DICOM messages.
- Warning level:
  This level logs warning messages.
- Info level:
  This level logs informational messages.
- T1 level: not used
- T2 level:
  This level logs the entire contents of messages sent or received over the network.
- T3 level:
  This level logs information related to association negotiation.
- T4 level:
  This level logs information when incoming associations are being rejected.
- T5level:
  This level logs information when a message is validated.
- T6 level:
  This level logs the contents of the Merge tool kit configuration.
- T7 level:
  This level logs the contents of a the command elements (group 0) for received and sent messages.
- T8 level:
  This level logs warning messages related to streaming in or out messages and files.
- T9 level:
  This level logs information about PDUs sent or received.
- Blank fill log file:
  If this feature is selected the log file size is to be expanded to the maximum possible size.
- Backup old log files:
  If this feature is selected old log files are backed up.
- Historical log files:
  To select the number of historical log files saved.

The Performance Page allows various parameters to be changed to improve performance.



PDU max. length:
Maximum size of Protocol Data Units that can be sent or received by the software DICOM.

Timeouts box:
Allows various timeouts (in seconds) to be set. If the application is running in a multi-tasking environment, the process is blocked during this waiting period and the system processor is available for other processes. If all the timeouts are set to 0 this is equivalent to polling, as DICOM returns immediately, whether a message has been received or not.

- Association Request:
  The waiting time for association request or for the peer to shut down an association.
- Association Response:
  The waiting time for a reply to an associate request.
- Connection:
  The waiting time for a network connection to be accepted.
- Release:
  The waiting time for a reply to an associate release.
- Write:
  The waiting time for a network write to be accepted.
- Inactivity:
  The waiting time for data between TCP/IP packets

Buffers:

This box allows various buffers to be configured to improve performance.

– Work Buffer:
  This option sets the buffer size before DICOM application stores the data or passes it. Setting higher values for this option increases performance.

– Send Buffer:
  This option sets the TCP/IP send buffer size. Higher values for this buffer increases the network performance of the tool kit for client (SCU) applications. This value is larger than the PDU max length.

4.9 Glossary

ACR:
American College of Radiology; Initiated the DICOM standardization effort in the early 80's

ACR-NEMA:
Predecessor of the DICOM standard defined by the ACR and NEMA; two versions were defined 1.0 and 2.0

AE:
Application Entity; a software process which implements DICOM. Most implementations use multiple AE's when implementing multiple Service Classes.

Attribute:
Attributes are the components of an information object definition (100), describing its properties.

DICOM:
Digital Imaging and Communications in Medicine standard.

IOD:
Information Object Definitions.

MergeCOM-3:
Merge Technologies Inc. provided toolkit performing low-level DICOM communication.

Modality:
Acquisition system such as a CT, MR, US, NM, CR.

NEMA:
National Electrical Manufacturing Association.

PDU:
Protocol Data Unit, a packet that is created at the DICOM lower-level protocol.

SCP:
Service Class Provider

SCU:
Service Class user

SOP:
Service Object Pair

TCP/IP:
Transmission Control Protocol/Internet Protocol.

UID:
Unique Identifier.

5 Software database

5.1 Installing the software database to existing MS SQL server

If MS SQL Server software already exists on the computer where the software database is to be installed:

Microsoft SQL Server 2005 or
Microsoft SQL Server 2008 SP1
Microsoft SQL Server 2008 R2
(Workgroup/Standard/Enterprise Edition)

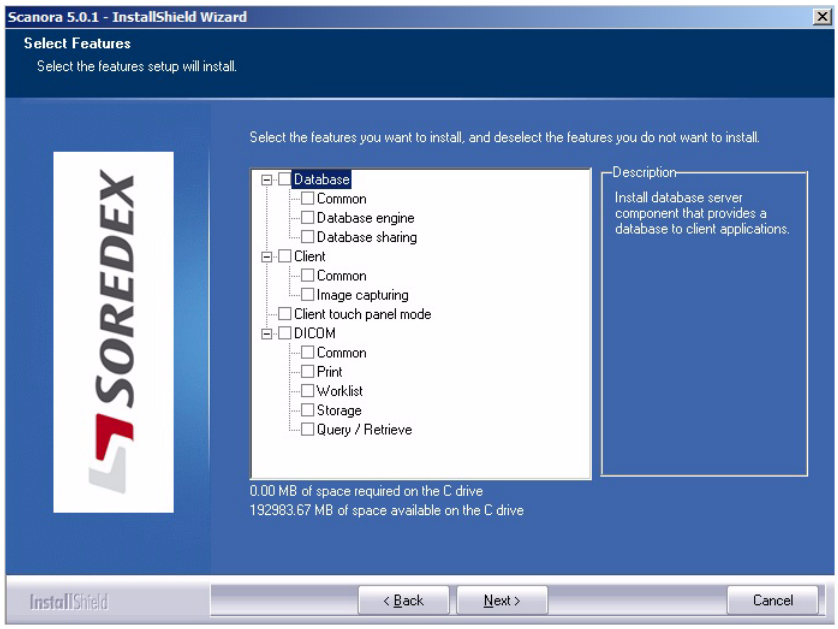
NOTE! *EDBI is not supported in a 64-bit MS SQL Server.*

The software database can be installed to existing Microsoft SQL Server database engine instead of using Microsoft SQL Server 2008 Express Edition engine, which is provided by the software installation package (the "Database engine" feature). If more advanced configuration options are needed, see the ADBIinstallation.pdf located in the "ADBI" folder of the software DVD.

A named instance is required for the software database. An instance can be created during Microsoft SQL Server Setup. Installation to default (unnamed) instance is not supported.

The SQL server must be configured to use mixed mode authentication. In addition, the TCP/IP protocol and named pipes must be enabled. To use mixed mode authentication, start SQL Server Management Studio. In Vista, SQL Server Management Studio should be run as an administrator. In SQL Server Management Studio Object Explorer, select server and then right click for properties. On the security page under Server Authentication select "SQL Server and Windows Authentication mode" and click OK. Then click OK on the dialog stating the need to restart SQL server. To restart the server, select the server and then right click for Restart. If an SQL Server Agent is running, it must be restarted also.

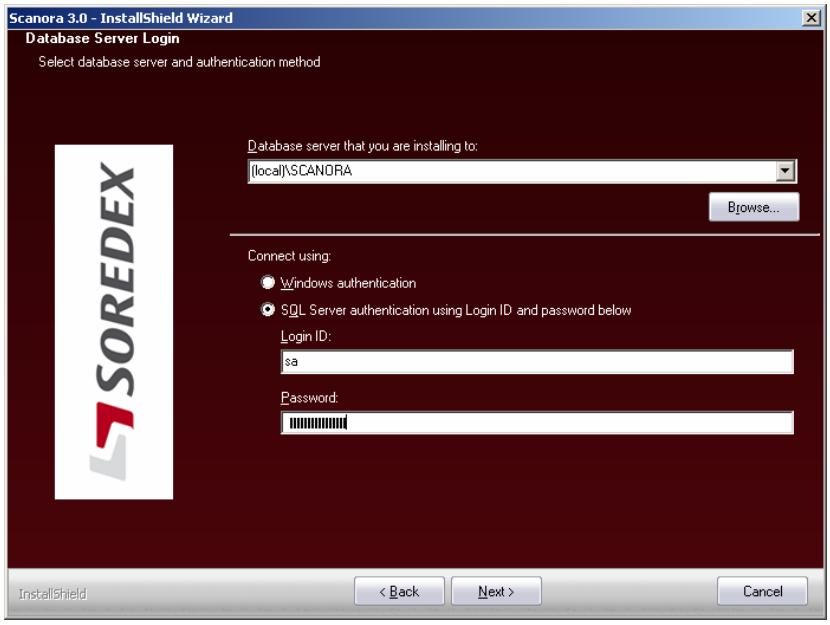
1. See chapter 2, Software installation, to follow instructions until the "Select Features" screen is shown.



2. Select the "Database" feature and remove the "Database engine" selection, i.e. only the "Common" sub-feature is selected. Click **Next**.

3. Select folder for database media files and click **Next**.

4. Select the database server that you want to install the software database to. Available instances are shown in the drop down menu. Make sure, that the "Connect using" setting is "SQL Server authentication using Login ID and password below". Fill in the correct Login ID and Password and click **Next**.



5. The software installation program is now ready to start copying files. Click **Next**.
6. Click **Finish** to complete the installation and restart the computer.

NOTE! *In the case of "Default log-in to database doesn't work, please authenticate manually" message appearing during the installation press the OK button to continue and proceed with the installation.*

NOTE! *Connection to the MS SQL Server, in step 4 above, may not work if the password contains special characters. In that case change the password to one without having special characters and then continue.*

5.2 Changing the software database location

NOTE! *If content of local database needs to be moved, see chapter 5.4, Restoring database to a new installation and/or location.*

5.2.1 Changing database location by uninstalling local database using Modify

This procedure removes the database from the local computer, where the software client is installed. If you do not want to remove the local database, see chapter 5.2.2, Changing database location by modifying ODBC alias.

1. Go to Control Panel ⇒ Add or Remove Programs (Programs and Features in Vista).
2. Select SCANORA and click **Change**.
   Wait for the software Setup Maintenance program screen to load.
3. Select “Modify” and click **Next**.
4. Unselect "Database" feature and click **Next**.
5. A question "If database is uninstalled, all patient data is going to be deleted from the database tables. Are you sure you want to continue?" is shown.
   Click **Yes**.
6. Select or enter the database server, where remote the software database resides e.g. enter the value under key "hostname" from server's DataSource.ini and click **Next** (default location of DataSource.ini in the server is C:\ScanoraData\Client).
7. Wait while Microsoft SQL Server 2008 database engine is being uninstalled.
8. When restart is suggested, select “Yes, I want to restart my computer now” and click **Finish**.
9. Log on to Windows using an account with administrator rights to finish maintenance.

5.2.2 Changing database location by modifying ODBC alias

Client computer is configured to use other than local database, and the local database is kept installed although the software client is no longer using it.

1. Go to Control Panel ⇒ Administrative Tools ⇒ Data Sources (ODBC).
2. Select "System DSN" tab.
3. Select SCANORA and click **Configure**.
4. Modify the "Server" field to correspond with the new database location.

   Change "(local)\SCANORA" to "SERVER\SCANORA" (or you can use the drop down menu which shows all available SQL Servers).
5. When the new SQL Server is written in the "Server" field, click **Next**.
6. Select "With SQL Server authentication using a login ID and password entered by the user." Also, check "Connect to SQL Server to obtain default settings for the additional configuration options." and fill in a valid Login ID/Password (admin/admin by default).
   Click **Next**.
7. Click **Next**, **Finish** and **OK**.

After both cases 5.2.1 and 5.2.2 client computer is configured to use the external software database.

5.2.3 Changing Standalone database to Network database using Modify

Client and database are installed on modality workstation and the database is not shared, i.e. database has been installed without the "Database sharing" feature. The standalone database is modified so that it is shared to network and clients installed on other computers are able to connect to it.

1. Go to Control Panel ⇒ Add or Remove Programs (Programs and Features in Vista).
2. Select SCANORA and click **Change**. Wait for the software Setup Maintenance program screen to load.
3. Select "Modify" and click **Next**.
4. Select "Database sharing" feature under Database title and click **Next**.
5. If license key is asked, enter your license and click **Next** and **Next**.
6. When restart is suggested, select "Yes, I want to restart my computer now" and click **Finish**.
7. Log on to Windows using an account with administrator rights to finish maintenance.
8. Now the database is shared to network and other client computers can be configured to use it. See chapter 5.2.2, Changing database location by modifying ODBC alias.

5.3 Database backup and restore

Database backup and restore utilities are installed under Tools folder in the software installation directory, e.g. \Program Files\SCANORA\Database\Tools\. The backup of the ScanoraData folder, including all subfolders, can be made with any backup software and media type that the user has available.

NOTE! *This describes a procedure, as an example, to backup both the database tables and medical images. Therefore ensure that all the ScanoraData contents fit in the backup media – it can be up to several gigabytes. The necessary backup software is supplied with the backup device (e.g. Magneto optical tape drive).*

5.3.1 Making instant backup from the software database

NOTE! *If you use 32-bit SQL Server in 64-bit Windows, do a following modification into BackupDB.bat before executing it. Replace instance of Program Files with Program Files (x86) in OSQLEXE definition.*

NOTE! *It is highly recommended that all users are logged off the software database.*

NOTE! *Running the backup/restore batch files under the Tools directory could fail under Windows Vista operating system due to missing permissions to create files under the Program Files directory. In such cases the problem can be circumvented by e.g. adjusting permissions or moving the Tools folder under some other directory.*

1. Run BackupDB.bat (located in the Tools folder mentioned in the beginning of the chapter).
   In Windows 7 run file in command line opened with "Run as administrator".
2. Enter the administrator password in the command-line (=admin by default).
3. The software database file is backed up ('pidbmsde.dat' in the backup directory, e.g. \ScanoraData\Backup).
4. Make a backup of the image directory (e.g. C:\ScanoraData), INCLUDE ALL CONTENTS!
5. Mark the backup media with the current date and store it in a safe place.

5.3.2 Restoring the software database from the backup

NOTE! *If you use 32-bit SQL Server in 64-bit Windows, do a following modification into ImportDB.bat before executing it. Replace instances of Program Files with Program Files (x86) in OSQLEXE and SQLCMD definitions.*

NOTE! *This procedure overwrites any existing patient data stored in the software database.*

NOTE! *This procedure does not restore users and creates default users. Use the software Manager to recreate users.*

1. Make sure that all users have been logged off the software database (restore does not succeed if the database is in use) e.g make sure that "PaloDEx 3D Reconstruction Service" and "SCANORA Database Backup Service" are not running.
2. Restore the image directory (e.g. C:\ScanoraData) from the backup, INCLUDE ALL CONTENTS!
3. Run ImportDB.bat (located in the Tools folder).
   In Windows 7 run file in command line opened with "Run as administrator".
4. Enter the administrator password in the command-line (=admin by default).
5. The database along with all the image data is now restored.

5.4 Restoring database to a new installation and/or location

NOTE! *This procedure has to be applied whenever MS SQL Server database has been re-installed. Otherwise the new database installation does not read any of the existing data or images but is running the newly created empty database.*

5.4.1 How to restore a database to another installation or new location

NOTE! *If you use 32-bit SQL Server in 64-bit Windows, do a following modification into BackupDB.bat before executing it. Replace instance of Program Files with Program Files (x86) in OSQLEXE definition.*

NOTE! *If you use 32-bit SQL Server in 64-bit Windows, do a following modification into ImportDB.bat before executing it. Replace instances of Program Files with Program Files (x86) in OSQLEXE and SQLCMD definitions.*

NOTE! *In Windows 7 run the files BackupDB.bat and ImportDB.bat in command line opened with "Run as administrator".*

(MS SQL Server 2005 Express/Workgroup/Standard/ Enterprise Edition supported)

If you already have an up-to-date backup of the whole image folder (ScanoraData) and you have a matching ‘pidbmsde.dat’ file there in the Backup folder, skip step 1.

1. Make backup from the existing database (source) by running the backup batch file (location e.g. "C:\Program Files\SCANORA\Database\Tools\ BackupDB.bat”, Username/Password: admin/admin by default).
2. Make a backup of the image folder (e.g. "C:\ScanoraData"), INCLUDE ALL CONTENTS!
3. Install the software database to the new computer (destination) and restart the computer when asked.

   NOTE! *For the system to work correctly the Database tables and Database media files must be located in the same computer.*

4. Delete the whole “Files” folder under the image folder on the destination computer
(location e.g. "C:\ScanoraData\DB\Files").

5. Copy the database backup file ‘pidbmsde.dat’ from source (=your backup) to the Backup folder on the destination
(location e.g. "C:\ScanoraData\Backup").
Replace existing ‘pidbmsde.dat’ if a file with that name already exists.

6. Copy the whole “Files” folder including all files and subfolders from source (=your backup) to destination (e.g. "C:\ScanoraData\DB\Files").

7. In case the database backup is from the same software database version as the new database, perform step A). In case the database backup is from the older software database version than the new database, perform step B).

   A) Run ImportDB.bat
   (location e.g. "C:\Program Files\SCANORA\Database\Tools\ImportDB.bat") and enter Username/Password (= admin/admin by default).

   B) See Old Backup Importer instructions found in installation media under Tools\OldBackupImporter to import a backup from SCANORA 3.0.0.12 or later to current version of the software.

8. Reconfigure the database connection (ODBC) of the clients as explained in the next chapter 5.4.2, How to reconfigure Database connection (ODBC).

(clients = all SCANORA 3.2 or later software on workstations and server if any).

NOTE! *Make sure that nobody uses the software before the database connection has been completely reconfigured (otherwise some data is saved to the old database).*

5.4.2 How to reconfigure Database connection (ODBC)

1. Open Start (⇒ Settings) ⇒ Control Panel (⇒ Switch to Classic View) ⇒ Administrative Tools ⇒ Data Sources (ODBC).
2. Select the "System DSN" tab.
3. Select SCANORA and click **Configure.**
4. Select "[The new server]\SCANORA" from the list and click **Next**.
5. Select "With SQL Server authentication using a login ID and password entered by the user." Also "Connect to SQL Server to obtain default settings for the additional configuration options." must be checked. Write username (by default: admin) to the "Login ID" field and password (by default: admin) to the "Password" field and click **Next**.
6. Click **Next** (again).
7. Click **Finish**, **OK** and **OK**.

5.5 Renaming Database Computer

There are certain steps that need to be taken when renaming computer, which hosts the software database with database sharing. These steps are done after the renaming is completed.

5.5.1 Configuring the file server

To configure file server to use the new computer name, open the software manager and select *File* ⇒ *File Server Configuration*. In the File Server Configuration dialog change the 'IP or computer name' to match the new computer name and then click **Save**.

5.5.2 Modifying Datasource.ini

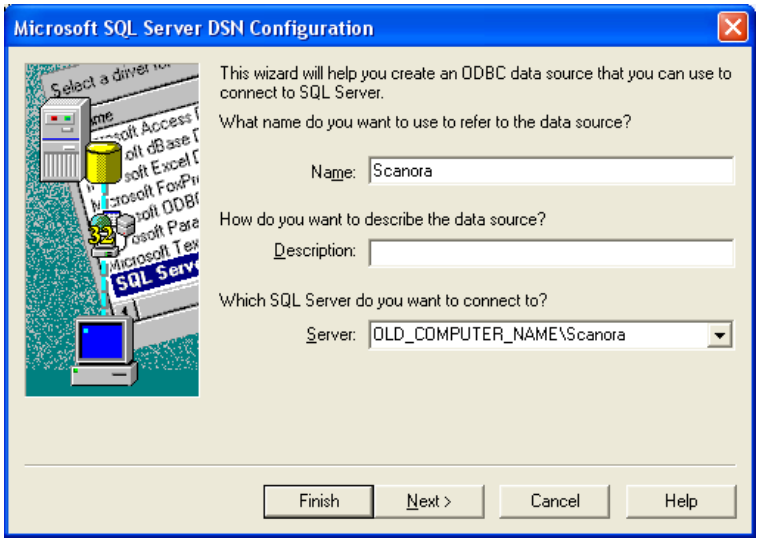
Modifying the Datasouce.ini is essential to new clients that are installed after renaming the database computer.
Datasource.ini is located at the folder ScanoraData\ClientConfiguration\.
File should contain the following lines:

[Data Source]
hostname=OLD_COMPUTER_NAME\Scanora
OLD_COMPUTER_NAME should be replaced with the new computer name.

5.5.3 Modifying Already Installed Clients to Use New Database Computer Name

NOTE! *This step must be done in every client computer.*

To modify already installed clients to use new database computer, open Control Panel and select Administrative Tools. In the Administrative Tools open Data Sources (ODBC) and go to System DSN page. Now select a system data source named SCANORA and click Configure.


Microsoft SQL Server DSN Configuration
This wizard will help you create an ODBC data source that you can use to connect to SQL Server.
What name do you want to use to refer to the data source?
Name: Scanora
How do you want to describe the data source?
Description:
Which SQL Server do you want to connect to?
Server: OLD_COMPUTER_NAME\Scanora
Finish
Next >
Cancel
Help

Replace the OLD_COMPUTER_NAME with the new one and click finish.

6 Upgrading the software

WARNING! *Before you start upgrade, back up database and images.*

NOTE! *Before you start upgrade, update the latest service pack for the computer operating system.*

6.1 Upgrading the software from version 3.1 or newer

1. Insert the software DVD into the DVD-ROM.
2. The installation program starts automatically. If the installation program does not appear, double-click the SCANORASetup.exe file on the DVD to start the software installation.
3. Follow the on-screen instructions to install the software.
4. Initialization screen "Preparing to Install...". Wait for the package to be extracted.
5. "Welcome to the InstallShield...". Click **Next**.
6. "License Agreement". Read the software license and click **Yes**.
7. "Start copying files". Verify the selected features and folders and click Next to continue.
8. Setup status dialog. Wait until software files are upgraded.
9. "InstallShield Wizard Complete". Restart the computer if asked and click **Finish**.

NOTE! *In the case of upgrade being done for an existing Network environment with Firewall enabled, add a new Inbound Rule or Exception for the software File Service in the Database Computer. Remember to update the correct path of SQL Server in the Inbound Rule or Exception also. (Refer the note related to Firewall in section 2.0.2 for more).*

7 Adding features

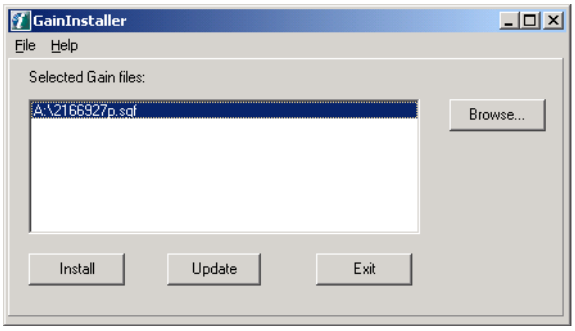
It is possible to add features or modalities at any time after the installation (e.g. DICOM).

7.1 Adding devices

X-ray device support in the software is installed during the software installation. You can add a new X-ray device at any time after the installation. Add devices in the software by selecting *Tools* ⇒ *Installed devices*.

NOTE! *IntraCam is in the dialog only when Intra Camera is installed to the PC.*

Only with CRANEX D: To use an X-ray device, install also the sensor-specific gain file by using Gain Installer:
Start ⇒ *Programs* ⇒ *SCANORA* ⇒ *Tools* ⇒ *GainInstaller*



Insert the Gain file media and browse the Gain file. Select all the gain files and click **Install**. Remember to copy the gain files for each camera and sensor.

NOTE! *The DIGORA Toto gain files are installed automatically, when the DIGORA Toto image capturing is started for the first time.*

If the gain files need to be updated, click **Update** to copy the files to local workstations.

7.2 Adding options

You can add a new option (e.g. DICOM) at any time after the installation.

1. Start ⇒ Settings ⇒ Control Panel ⇒ Add or Remove Programs (Vista: Programs and Features)

2. Select SCANORA. Click **Change.**

3. The software Setup Maintenance program starts. Select Modify and click **Next**.

4. See already installed features in the Select Features dialog. Add features by selecting the needed features. Click **Next**.

5. InstallShield Wizard may ask:
   Do you want to reconfigure external database selection?

   Click **No** if you continue using the same database as before. Click **Yes** if you change the database.
   See chapter 5.3, Database backup and restore.

6. If you are adding a Database, restart your computer. Select 'Yes, I want to restart my computer now' and click **Finish**.

   Re-log into Windows using administrator rights.

   If you are adding other features than Database, maintenance is complete. Click **Finish**.

8 Uninstalling

8.1 Uninstalling the software

To uninstall the software, select *Start* ⇒ *Settings* ⇒ *Control Panel.* Double click **Add or Remove Programs** (Vista: Programs and Features), select SCANORA and click **Remove** (Vista: "Uninstall"). Follow the instructions on the screen.

If older versions of the software has been installed, do not remove the software before verifying that the software is working and the converted database can be used.

The software uninstallation leaves directories on the hard drive and saves the database and images. Uninstallation is for removing the software only. The software uninstall does not remove any device drivers such as PCI drivers.

CAUTION! *Connection between all images and patient data is lost when the software with the database is uninstalled.*

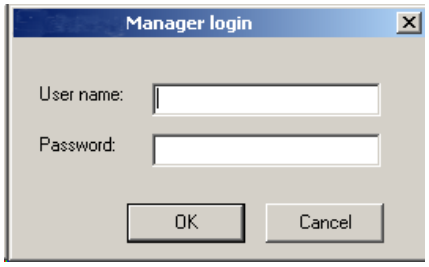
9 Software Manager

The software Manager is used to archive images, restore archives, alter image saving format, define data directory (images) location, manage users, schedule backups, manage trash and logs.

9.1 Login

The software Manager can be launched from
Start ⇒ *Programs* ⇒ *SCANORA* ⇒ *Tools* ⇒ *Manager*.

The software Manager is password protected to prevent unauthorized usage.



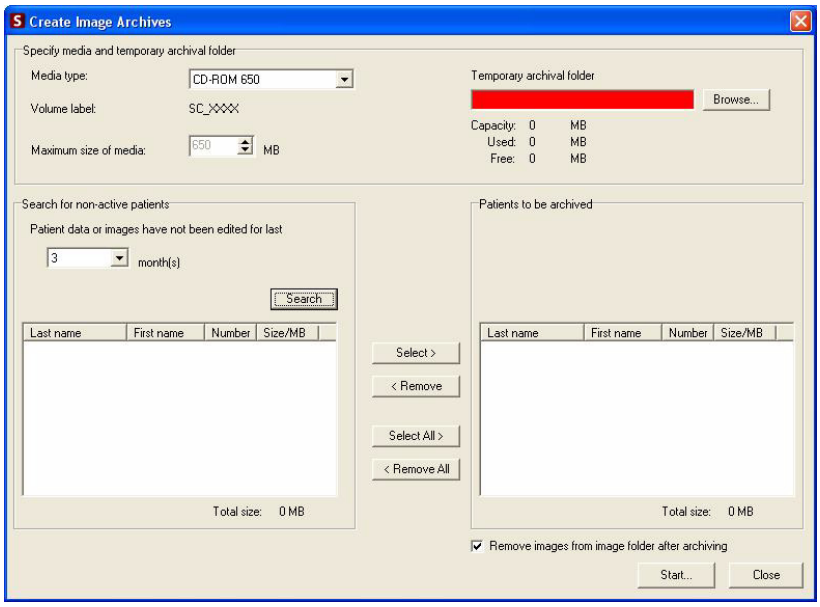
Enter the user name, password and click **OK**.
Default user name is **admin**, and password is **admin**.

9.2 Archiving

To release hard disk storage space on the server, the unused images can be copied or moved to an archive media. The information and scout images of these images remain in the database, allowing easy retrieval whenever it becomes necessary to view any of the archived images.

9.2.1 Create archive

1. To archive images, select *Create* from the software Manager dialog.

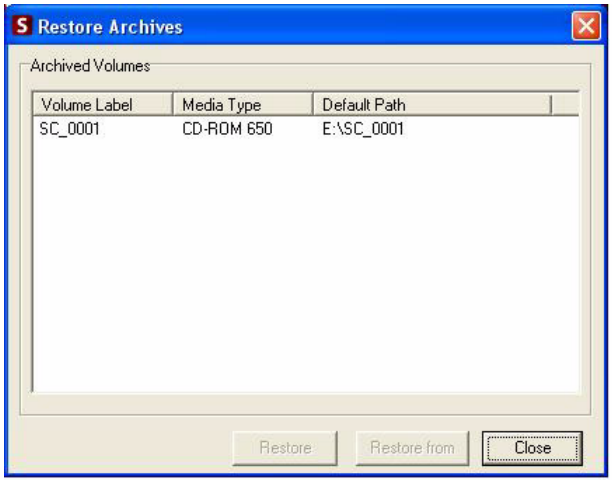


2. Select media type for archiving. Select the temporary archival folder.
3. Define the time for inactive patients. For example, if you select inactive patients or data within the past six months, the program offers all images of those patients to be archived.
4. Select the patients whose images you want to archive. Also select if you want those images to be removed from the patients image folder on the hard disk. Otherwise the archived images are shown as archived images in the patients image folder.
5. To start the archiving, click **Start**.
6. Archive operation creates archive folders (SCANORA_xxx) in the temporary archival folder. To burn archived images to DVD-ROM, use DVD-disk software and burn SCANORA_xxx folders to DVD.

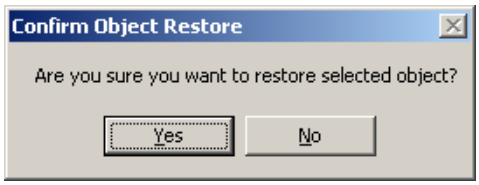
NOTE! *Store the software installation and archive DVD's very carefully.*

9.2.2 Restore archive

1. To restore the archive, select **Restore** from the software Manager dialog. To restore an archive from another path than the default, click **Restore from**.



2. Select the archive to be restored and click **Restore**.



3. Click **Yes**.
4. After clicking **Restore from**, browse the directory for archives.
5. Select a folder and click **Yes**.

9.3 Images

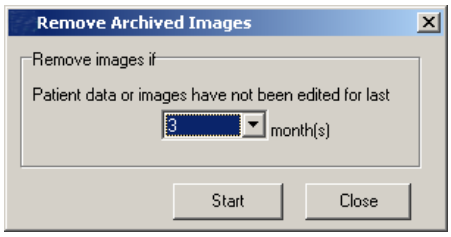
9.3.1 Remove archived

NOTE! *Removing archived images can be done automatically after archiving by checking the* **Remove images from image folder after archiving** *box on the "Create Image Archives" dialog.*

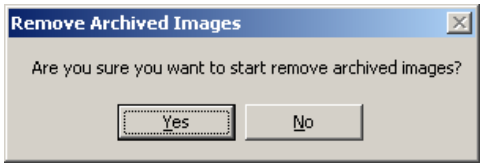
Previously archived images can be removed from the server to free up more storage space. Select the removal criteria between 0 to 12 months of time during which the patient´s images have not been reviewed.

To remove the archived images from the patient image folder, select *Remove achieved* from the software Manager dialog.

1. Select the appropriate time and click **Start**.

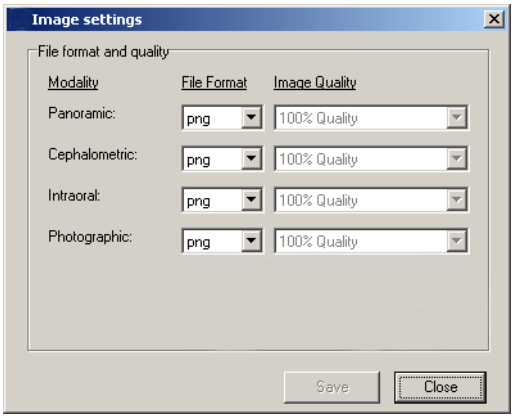


2. Click **Yes** to start removing the archived images.



9.3.2 Settings

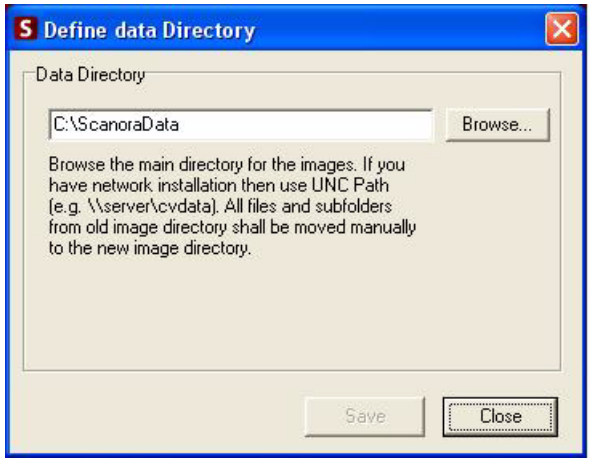
Select PNG or JPG as the saving format.
Select 60%—100% quality for JPG.
Compressing images may decrease the image quality.



9.3.3 Image folder location

NOTE! *Do not use drive mapping when changing the data directory. The software database backup will not work when a mapped network drive is used to access the ScanoraData folder. If you have a network installation, please only use an UNC path to define the data directory location in the software Manager.*

1. To change data directory (images), select *Location* from the software Manager dialog.

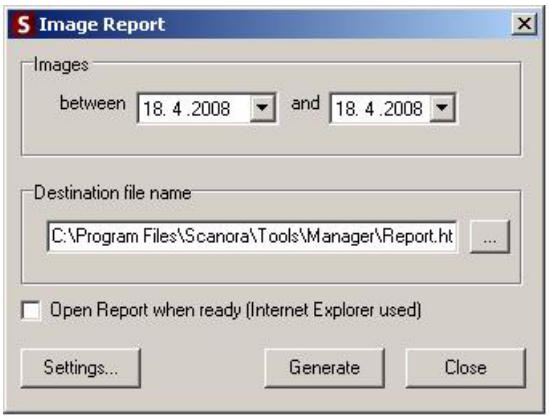

Define data Directory
Data Directory
C:\ScanoraData
Browse...
Browse the main directory for the images. If you have network installation then use UNC Path (e.g. \\server\cvdata). All files and subfolders from old image directory shall be moved manually to the new image directory.
Save
Close

2. Create a new data directory and share it (if network installation).
3. Copy all files and subdirectories from main directory (e.g 'ScanoraData') to the new data directory.
4. Browse the new data directory and click **Save**.

NOTE! *Be sure that the software is not used when changing the data directory.*

9.3.4 Report, Exposure statistics

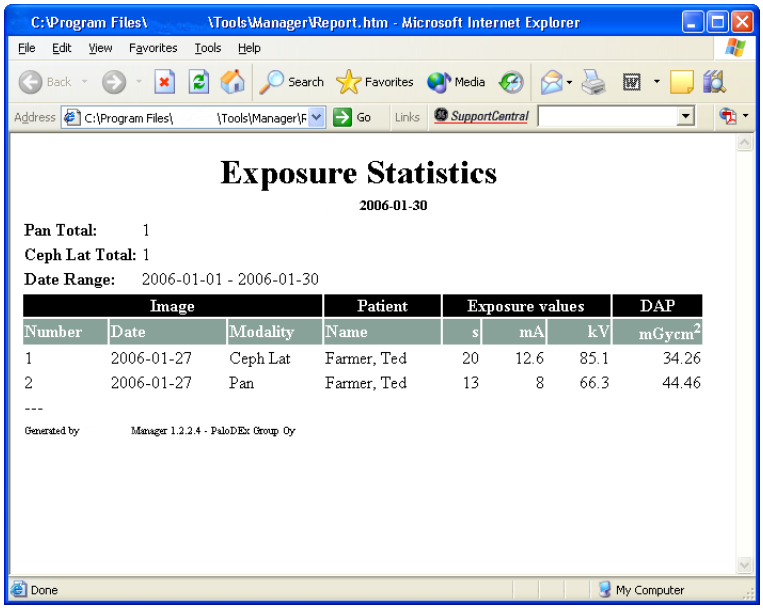
1. To create an exposure statistics report, select Report from the software Manager main view.



2. Enter the report parameters and click **Generate** to create a report.

Viewing report

Open ***.htm** file (e.g. Report.htm) with Internet Explorer.


C:\Program Files\ \Tools\Manager\Report.htm - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address C:\Program Files\ \Tools\Manager\R Go Links SupportCentral
Exposure Statistics
2006-01-30
Pan Total: 1
Ceph Lat Total: 1
Date Range: 2006-01-01 - 2006-01-30
Image Patient Exposure values DAP
Number Date Modality Name s mA kV mGycm²
1 2006-01-27 Ceph Lat Farmer, Ted 20 12.6 85.1 34.26
2 2006-01-27 Pan Farmer, Ted 13 8 66.3 44.46

Generated by Manager 1.2.2.4 - PaloDEx Group Oy
Done
My Computer

The report contains the following data:

- Header: 'Exposure statistics', Report date (e.g. SCANORA 2006-01-30)
- Total count of images by modality
- Date Range
- Image list with values: Image Date, Modality, Patient name, Exposure values and DAP value

The image list is sorted by modality and image date.

Export Data

The easiest way to export data is to use the clipboard as following:

- Select Edit ⇒ Select All (Ctrl+A) from Internet Explorer
- Select Edit ⇒ Copy (Ctrl+C)
- Open third party software (e.g. Word or Excel)
- Select Edit ⇒ Paste (Ctrl+V)

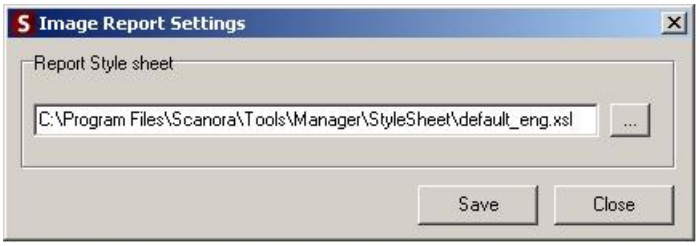
Make your own report

It is also possible to make your own style sheet, but XML skills are required.

Choose Style Sheet for a report

- Click 'Settings…' on Image Report dialog
- Browse or enter Style Sheet path and click 'Save'

The software Manager remembers the last used style sheet.



9.4 Database

9.4.1 User Management

User management makes it possible to define categories for different users and define passwords for each user.

Select *User management* from the software Manager dialog.

Administrator category means that the user has rights to both the software and the software Manager. Users in default category are entitled to start the software program only.

Mark the upper left corner to activate the user management function. Add and remove users.

To add a user, click **Add**.

Select the name of the user from the list or click **Add** to create a new user.

Enter the information for the new user and click **OK**.

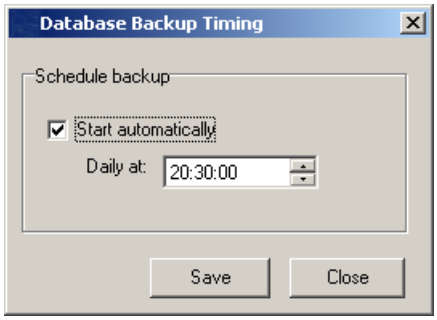
To change the password for user click **Set Password**.

Fill in the fields and click **OK**.

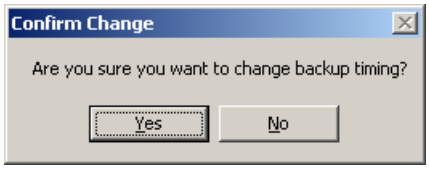
9.4.2 Database backup

Choose the schedule for automated backup of the Database tables.

NOTE! *This function does not create a backup of the images. See Chapter 5.3, Database backup and restore.*



Define the schedule and click **Save**.

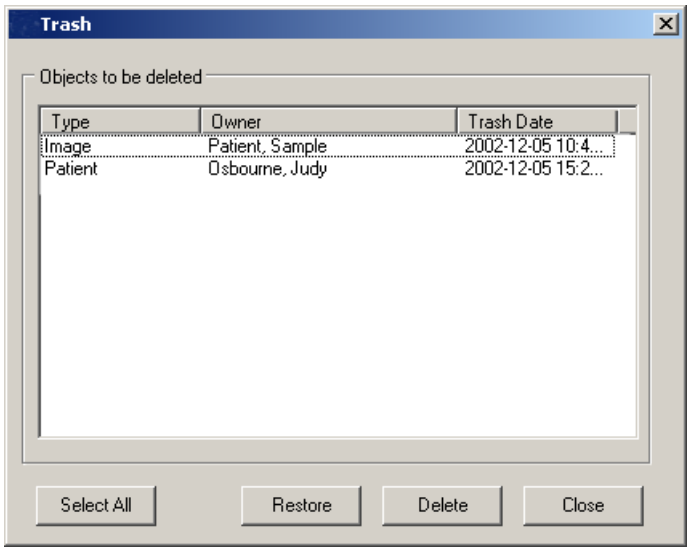


Click **Yes**.

9.4.3 Trash

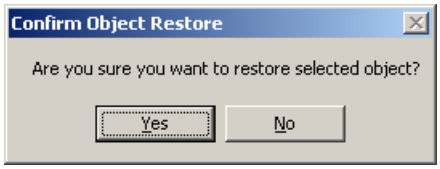
Various objects that have been previously marked as deleted in the software can be permanently deleted from the database in the trash menu. This means that the software user can not permanently delete any information unless the administrator empties the “deleted” information from the trash.

Select *Trash* from the from the software Manager dialog.



Select all
All objects can be selected for deletion.

Restore
Deleted information can be restored for further usage.



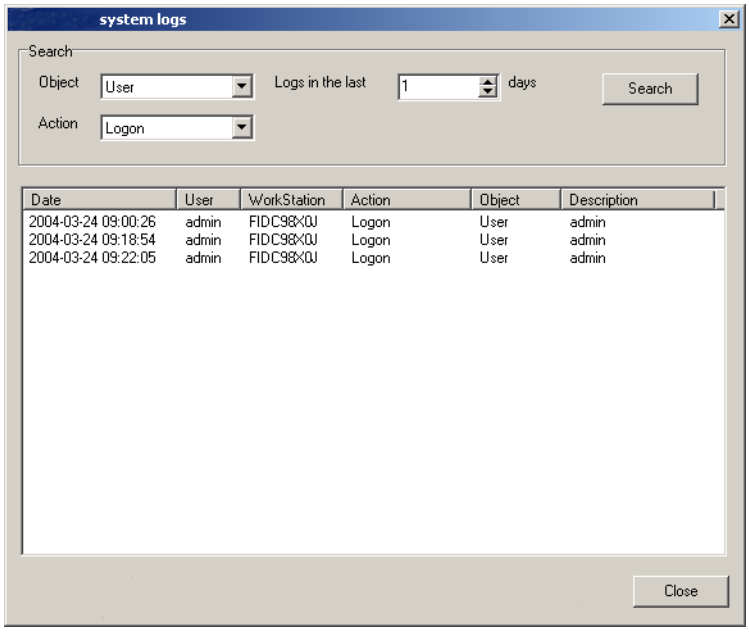
Confirm restore.

Delete
Information is deleted permanently.

To confirm removal, click **Yes**.

9.4.4 System Logs

To view user actions in the software, select **Logs** from the software Manager dialog.



9.4.4.1 Search logs

It is possible to restrict search results with the following filters: Object, Action and number of 'last days'.

Select **Object** where action is targeted as: *All, Database, Image, Patient, Study* or *User*.

Select **Action.** The following combinations are possible:

Object	
All	All Actions
Database	Update
Image	Archive, Capture, Delete, Hide, Import and Restore
Patient	Delete and Hide
Study	Delete and Hide
User	Login and Logoff

Define the number of days you want to look back for the software system logs.

If '1' is selected then today's logs are shown, and if '2' is selected then today's and yesterday's logs are shown, and so on.

To start searching logs, click **Search**. The search list can show 500 items at a time. If more items exist, it is necessary to restrict search with filters or by removing log items.

9.5 File Server Configuration

In a network configuration, as a default, computer name is used instead of IP address. In case of misconfigured DNS server or absence of a local DNS server, it is recommended to use the IP address. This can be manually done using the file server configuration by specifying the correct IP address instead of the computer name.

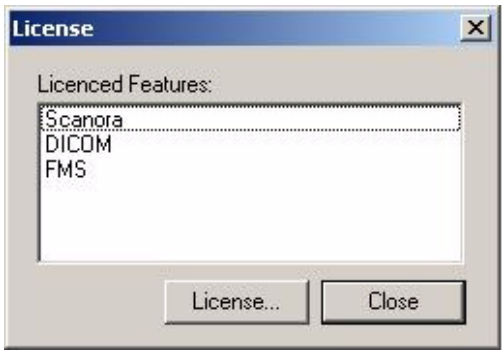
The default port for File Server is 899. In case the defualt port is being used by some other application, default port can then be changed using File Server configuration.

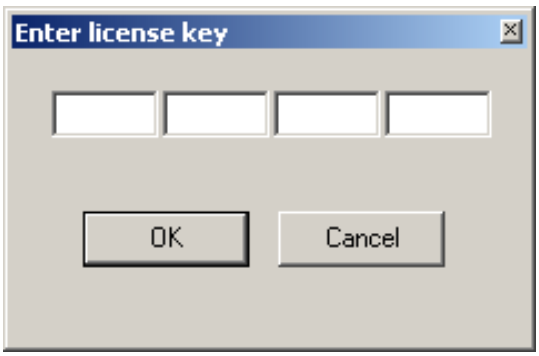
File server configuration is done from File ⇒ File Server Configuration.

NOTE! *The File server IP must not be configured to a different computer than where the Database is running.*

9.6 License

The currently installed license key is shown in the dialog. Click **License** to change the key.





Fill in the license key provided with the software.

10 Using practice management interface

NOTE! *If patient data is tranferred in to the software by other software, this software must conform to applicable local laws and regulations on patient information softwares.*

10.1 Introduction

The software uses an initialization file called SCANORA.ini.

The file is installed in the software settings directory, which is operating system specific:

- Windows XP: C:\Documents and Settings\All Users\Application Data\SCANORA
- Windows Vista: C:\ProgramData\SCANORA

However, for compatibility reasons, the software still uses the old CliniView.ini file path, in Windows XP, if the practice management software continues to write data to it. This file is installed in %windir% folder, and %windir% is the folder where Windows is installed, for example C:\Windows (Windows XP).

Viewing System Variables (e.g. %windir%)

1. Click Start, point to Settings, and then click Control Panel.
2. Double-click System.
3. On the Advanced tab, click Environment Variables.
4. All current system variables and their associated values are listed in the lower list.

The installation directory and executable path are defined in Windows registry.

HKEY_LOCAL_MACHINE\SOFTWARE\Soredex\ SCANORA

- ProgramDir - SCANORA path, for example C:\Program Files\SCANORA
- ExeFile - SCANORA executable, for example C:\ProgramFiles\SCANORA\SCANORA.exe

When starting the software, the settings are read from the SCANORA.ini configuration file. It is allowed to run only one instance of the software on a computer at a time. If starting the software while the software is already running, no additional instances of the program are started. However, the already running the software reads the Practice Management Interface section of the SCANORA.ini file and acts accordingly. Finally, the software sets all entries in the Practice Management Interface section to 0.

The Practice Management Interface section in the SCANORA.ini file is described below.

The mandatory fields are:

USE_PRACTICE_MANAGEMENT:

If set to 1, the software reads the Practice Management Interface section at startup and on activation and users are not allowed to change or add new patients manually from the software user interface

CLEAR_PRACTICE_MANAGEMENT_AUTOMATICALLY:

If set to 1, the software resets USE_PRACTICE_MANAGEMENT and the patient keys every time the software reads the SCANORA.ini file. If set to 0, the software does not reset (to 0) the keys.

PATID:

Patient ID shall be unique and defined by PMS software.

Practice Management Interface PATBD defines date of birth, which shall be formatted as defined in system regional settings.

CLEAR_PRACTICE_MANAGEMENT_AUTOMATICALLY =1 USE_PRACTICE_MANAGEMENT= 1

PATID = 00000

PATLNAME = 0

PATMNAME = 0

PATFNAME = 0

PATSOCSEC = 0

PATBD = 0

PROVIDER1 = 0

PROVIDER2= 0

ADDRESS1 = 0

ADDRESS2= 0

CITY = 0

STATE = 0

ZIP = 0

HOMEPHONE = 0

WORKPHONE = 0

FAX = 0

EMAIL1 = 0

EMAIL2 = 0

Some PMS software that uses previous versions of the software might require that USE_PRACTICE_MANAGEMENT is permanently set by the user to 1 and that CLEAR_PRACTICE_MANAGEMENT_AUTOMATICALLY =0.

It is recommended that the PMS application sets both USE_PRACTISE_MANAGEMENT=1 and CLEAR_PRACTISE_MANAGEMENT_AUTOMATICALLY =1.

The software can read patient information from any ini file if the following line is added to [PracticeManagementInterface]- section:

BRIDGEFILE_LOCATION_OVERRIDE =C:\my_ini_file.ini.

10.2 How to use SCANORA.ini

Set CLEAR_PRACTICE_MANAGEMENT_AUTOMATICALLY =1, if the PMS software automatically sets USE_PRACTICE_MANAGEMENT = 1. Otherwise, set the key to 0.

To add a patient:

- Set USE_PRACTICE_MANAGEMENT = 1 ·
- Set PATID to a patient ID that does not exist in the software database yet.
- Fill in the patient data fields
- (Re)start the software

To alter patient information:

- Set USE_PRACTICE_MANAGEMENT = 1
- Set PATID to match the patient whose information is to be changed.
- Fill in the patient data fields to be changed.
- If the content of a specific data field is not needed to be changed, set its value to 0.
- (Re)start the software

To preselect a patient:

- Set USE_PRACTICE_MANAGEMENT = 1
- Set PATID to match the patient to be preselected.
- Set all data fields to 0.
- (Re)start the software

To disable the practice management interface:

- Set USE_PRACTICE_MANAGEMENT = 0

10.3 Interface to access image information

NOTE! *If images are brought into another software and to be used for diagnostic purposes, this software must conform to applicable local laws and regulations on patient information softwares.*

The software supports external application called PMSif which provides direct access to images in the software database. SCANORA.ini has four fields which can be used together with PMSif to export the image.

[Image]

ActiveImageGUID=

ActiveImageID=

LastCaptureGUID=

ActiveImageIndex=

Use ActiveImageGUID or ActiveImageID to export the image visible in currently active image window from database. ActiveImageGUID is preferred over ActiveImageID (retried). Use LatestCapturedImageID to export latest captured (saved) image from database.

Only the latest ID’s of the saved images are shown.

LastCaptureID and LastCaptureGUID are visible after the first image is captured.

See Soredex web page to get additional information about PMS interface.

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suppliers, and even if Licensor or any of its suppliers has been advised of the possibility of such damages.

7. Applicable Law and Jurisdiction

7.1 This Software License to be construed governed by and interpreted in accordance with the laws of Finland, excluding the UN Convention on Contracts for the International Sale of Goods.

7.2 Disputes arising from or in connection with this Software License are to be settled by arbitration by one arbitrator. The Board of Arbitration of the Central Chamber of Commerce of Finland shall appoint the arbitrator and the Rules of the said Board are to be followed in the arbitration proceedings. The arbitration shall be held in Helsinki, Finland and conducted in the English language.

7.3 Notwithstanding the foregoing, Licensor and its suppliers shall have the right, but not the obligation, to undertake legal proceedings in a court of your domicile, principal place of business or other appropriate court to: (i) settle any issue or dispute arising out of or relating to monies due by you to Licensor; (ii) protect or enforce any patent, trademark, copyright or other intellectual property right, confidential information or trade secrets; or (iii) proceed with litigation commenced by a third party.

7.4 Judgment upon the award rendered may be entered in any Court having jurisdiction or application may be made to such Court for a juridical acceptance of the award and an order of enforcement, as the case may be.

8. General

8.1 This Software License (together with license terms of third party suppliers of Licensor, if any) constitute the entire agreement with respect to the subject matter hereof between you and the Licensor and supersedes all previous oral or written communications or agreements relating to the same. Only a written instrument expressly agreed to by the parties hereto may modify this Software License.

8.2 The failure of Licensor to enforce any provision of this Software License shall not be considered a waiver of any subsequent breach of that provision or as a waiver of any other provision hereof.